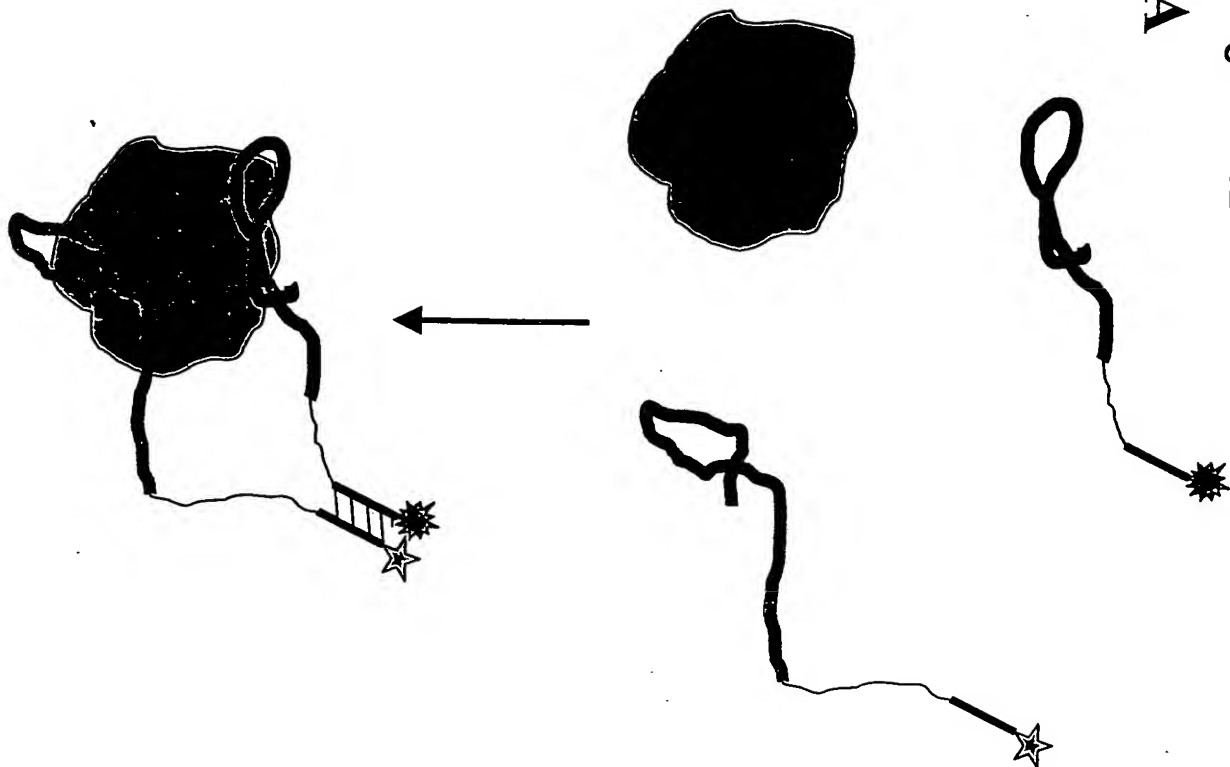
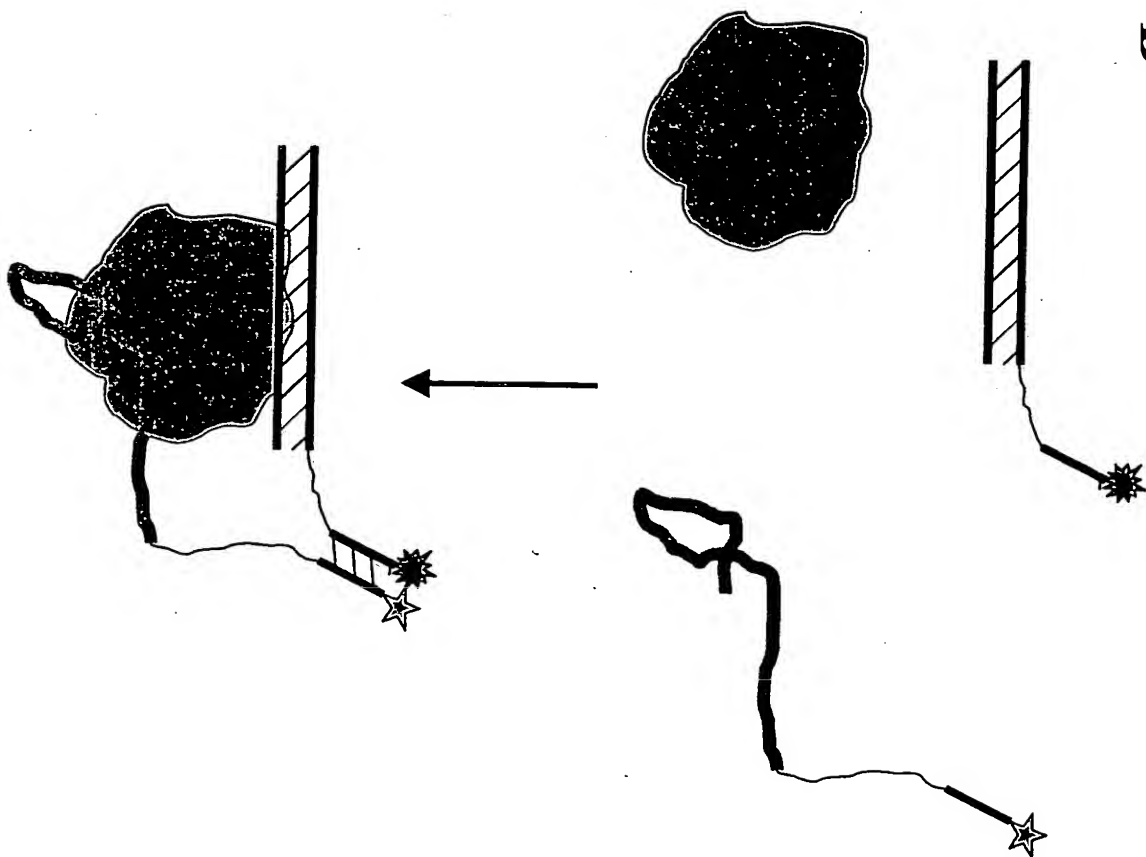


Figs. 1A-1B

A

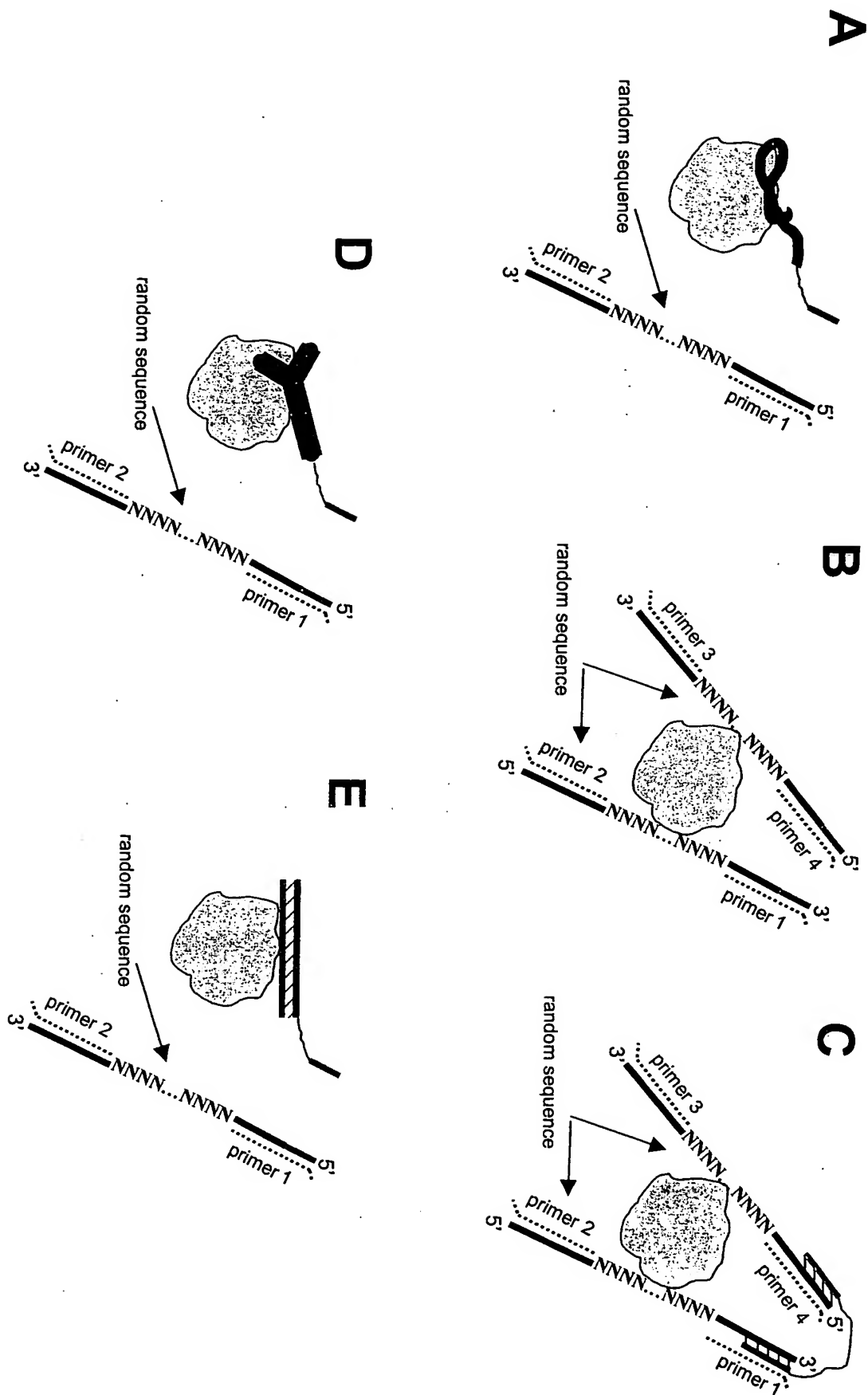


B



BEST AVAILABLE COPY

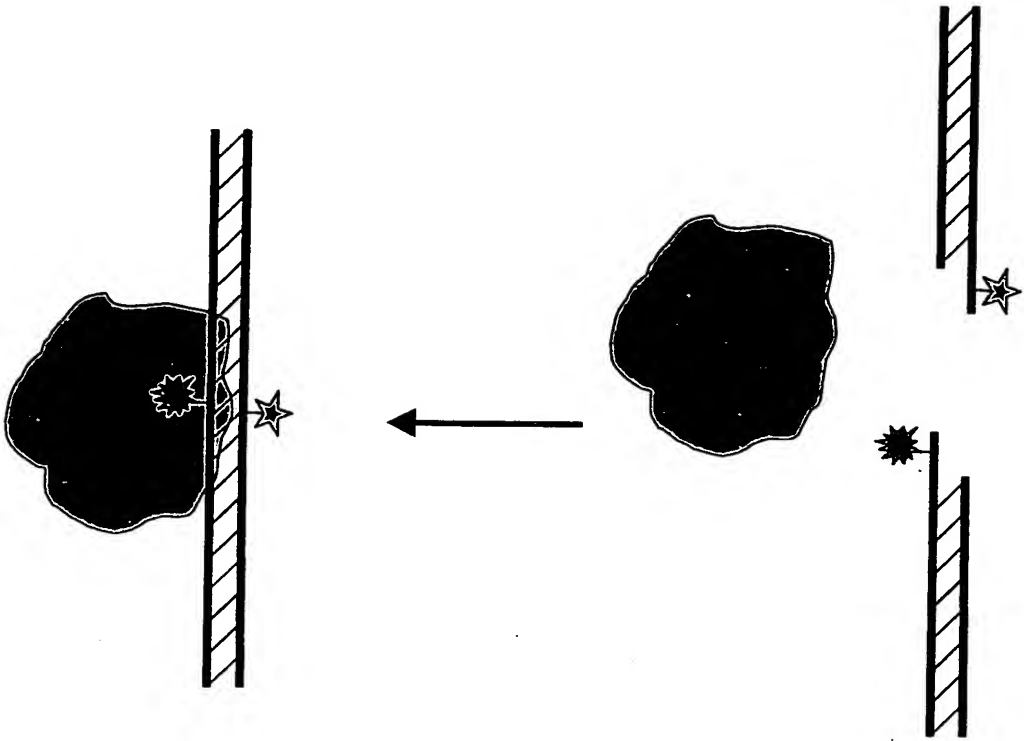
Figs. 2A-2E



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Figs. 3A-3B

A



B

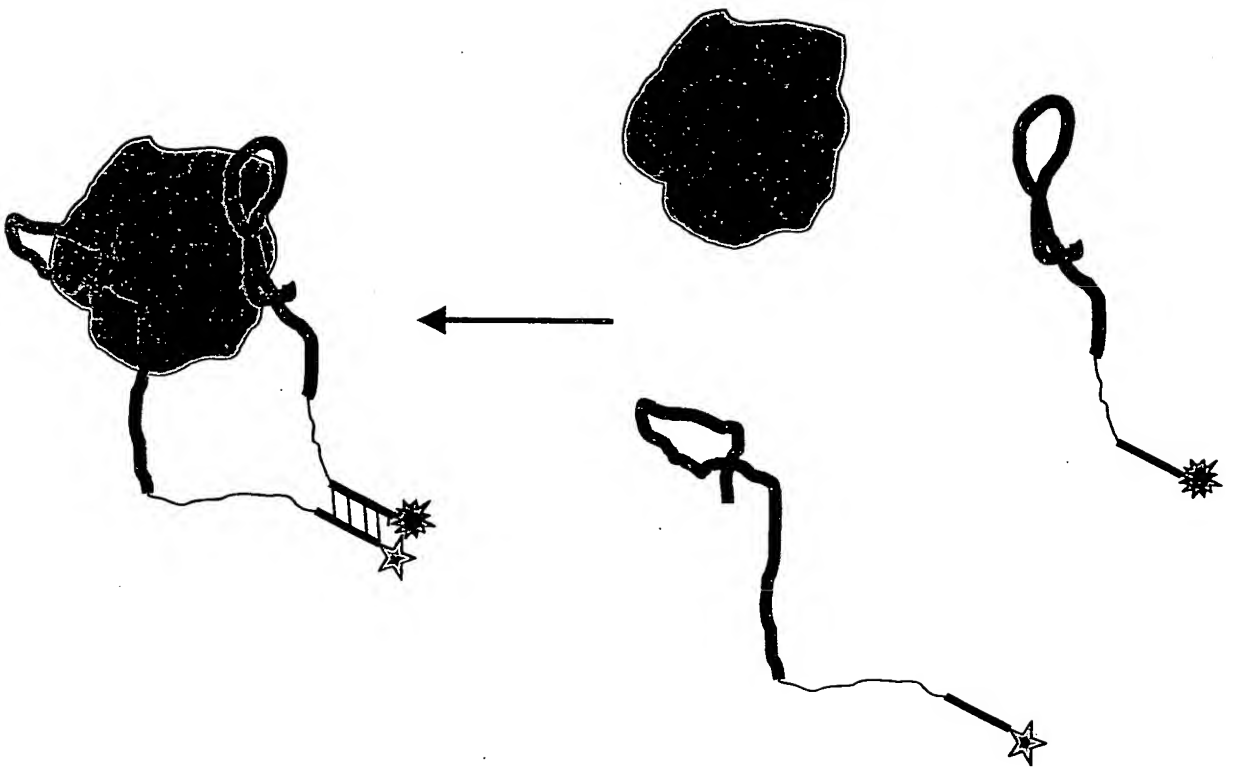
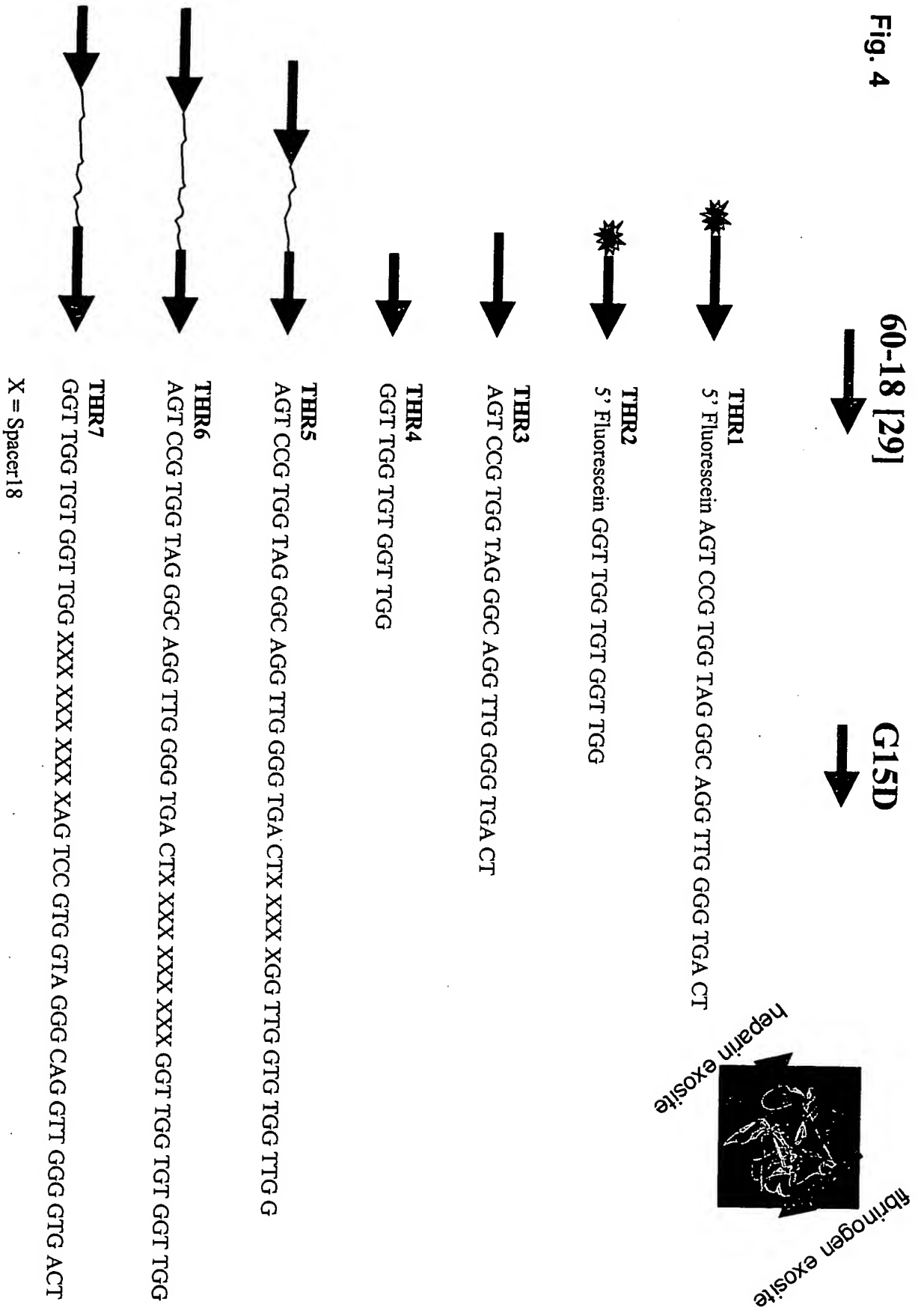
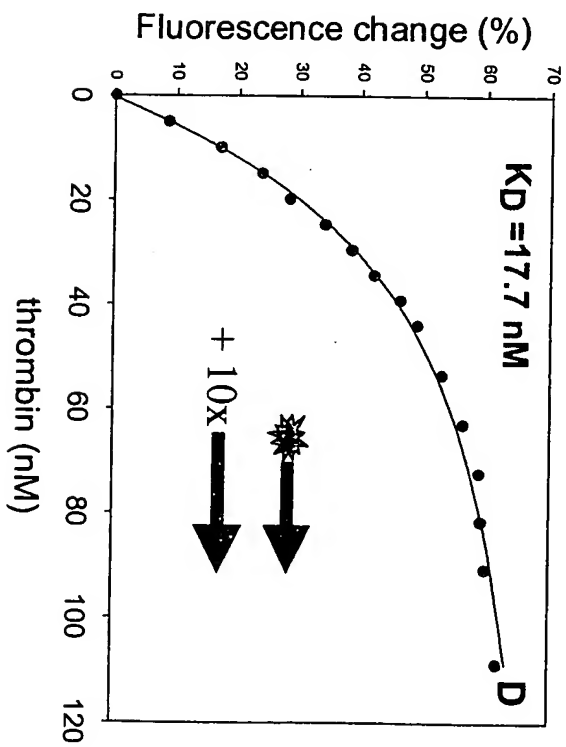
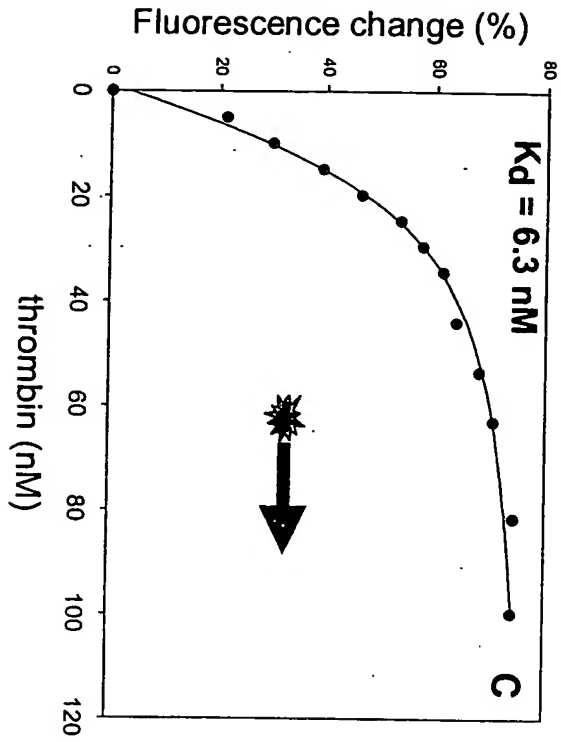
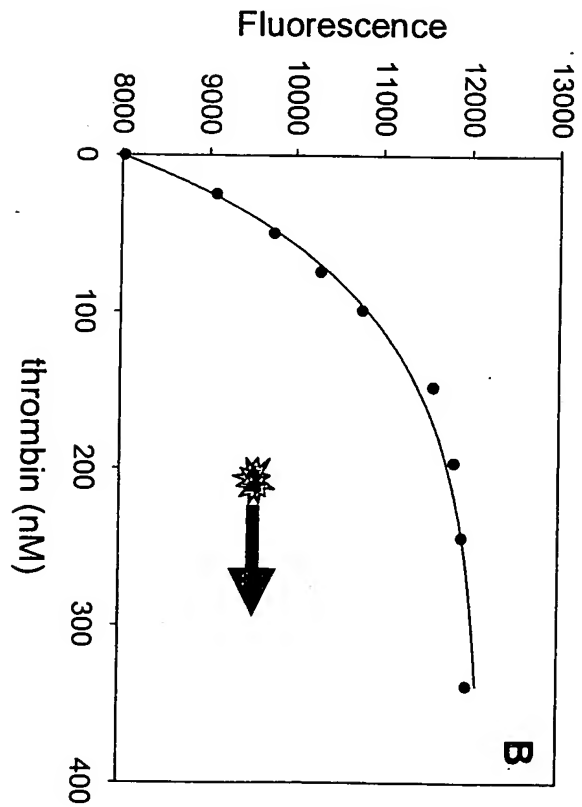
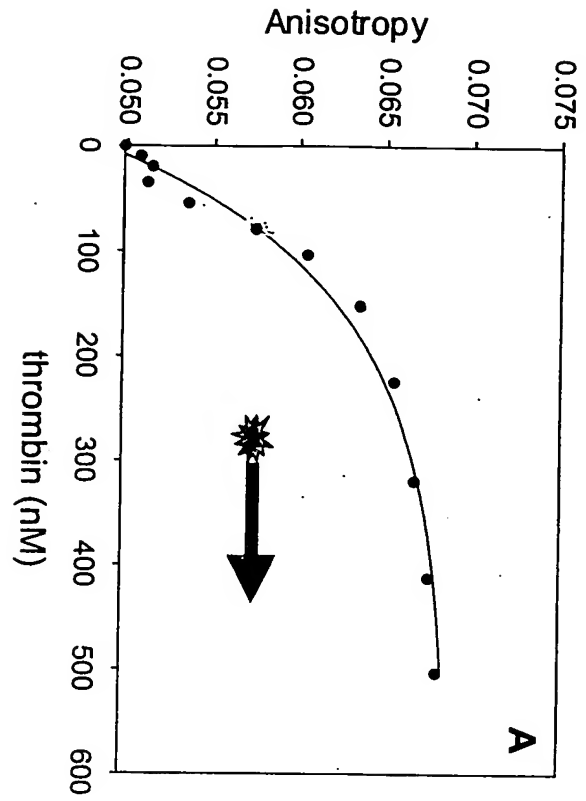


Fig. 4



Figs. 5A-5D



Figs. 6A-6D

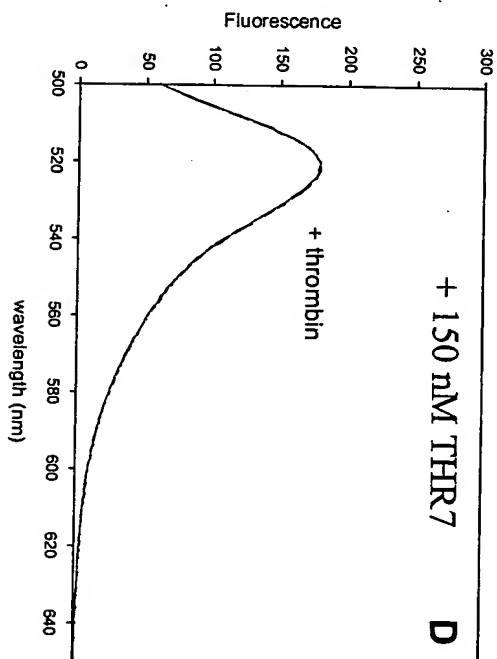
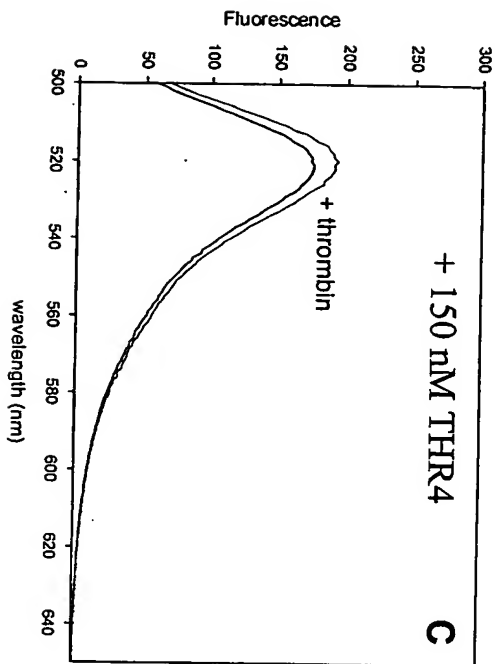
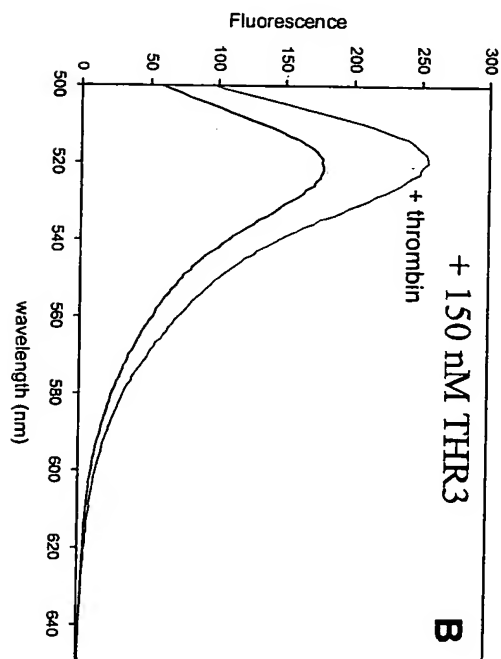
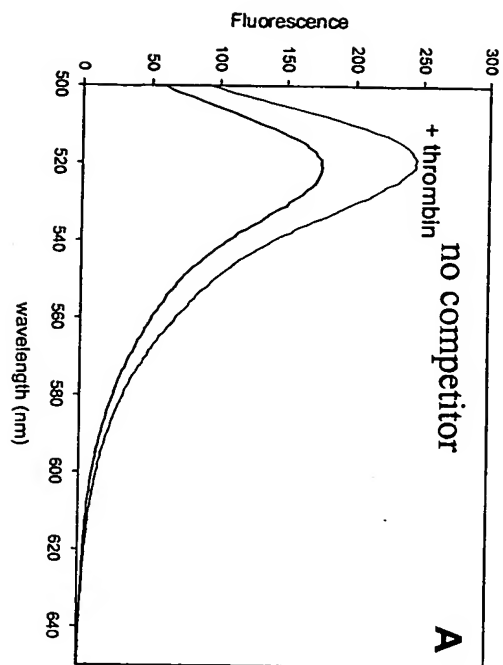
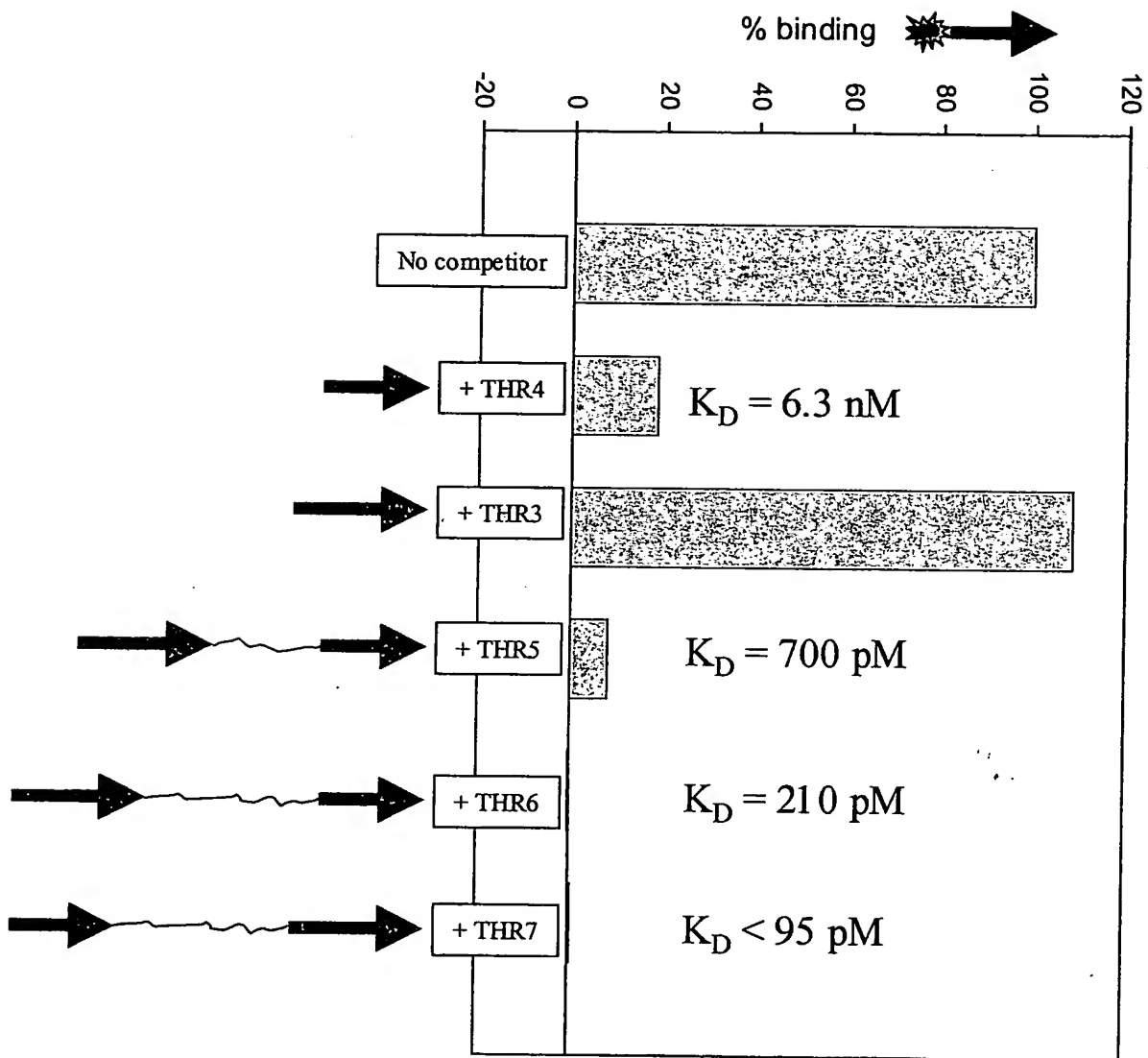
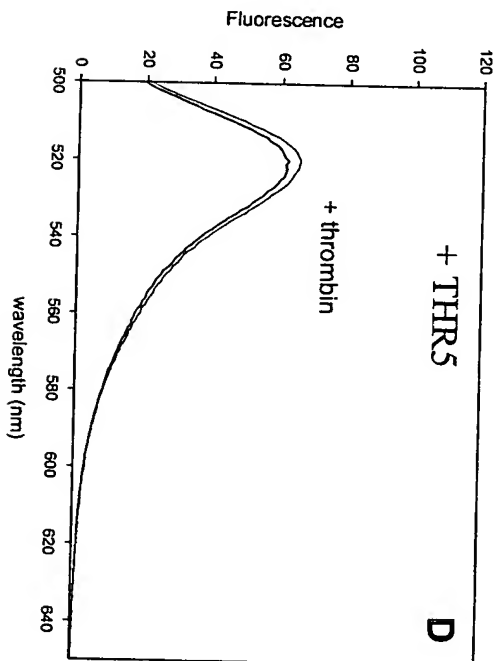
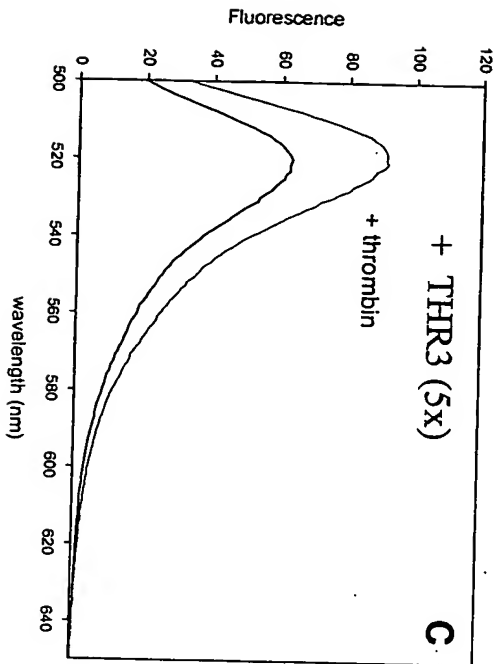
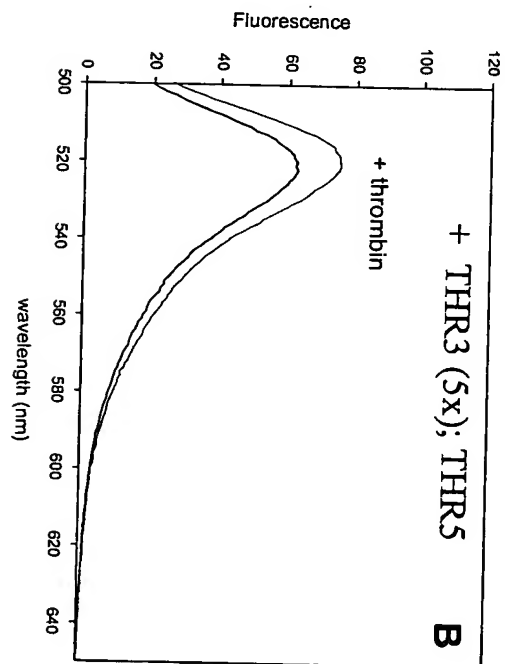
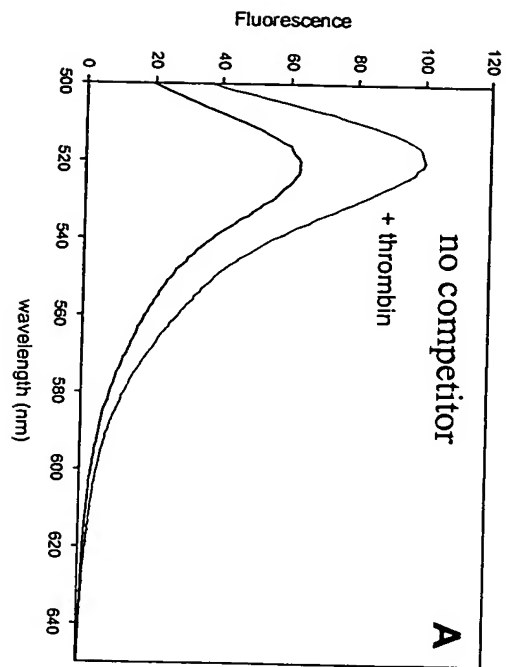


Fig. 7



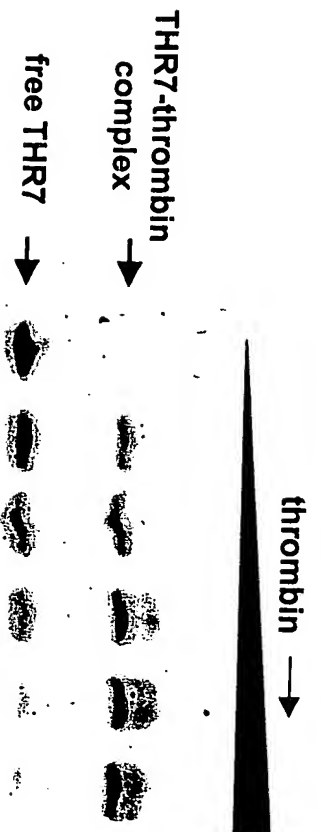
Figs. 8A-8D





Figs. 9A-9B

A



B

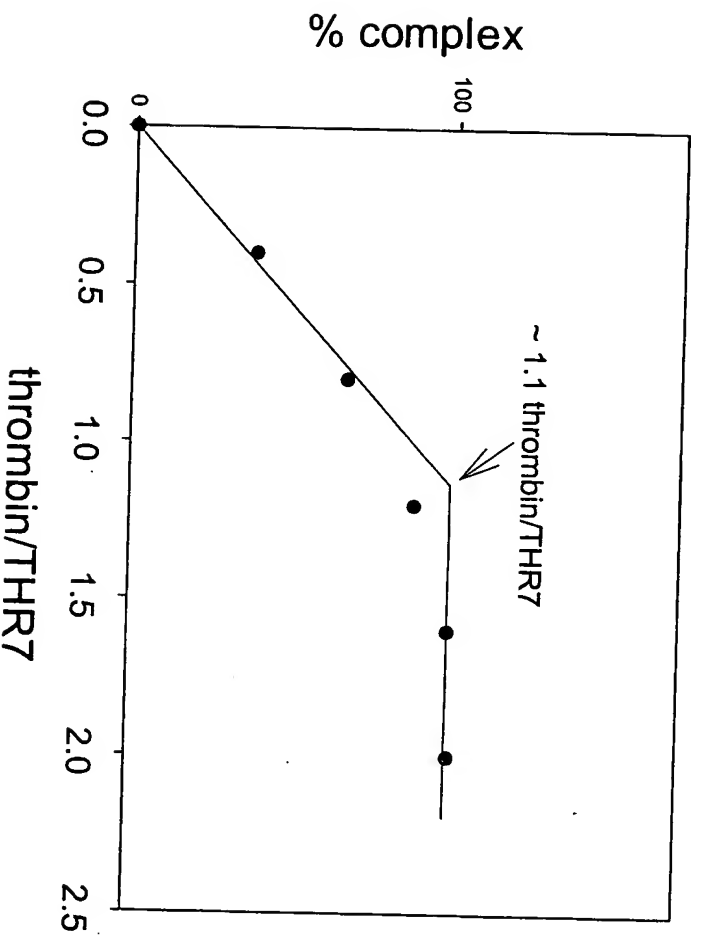
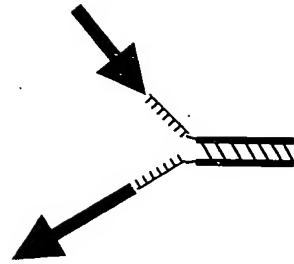


Fig.10

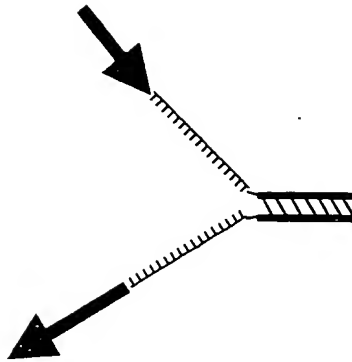
60-18 [29]



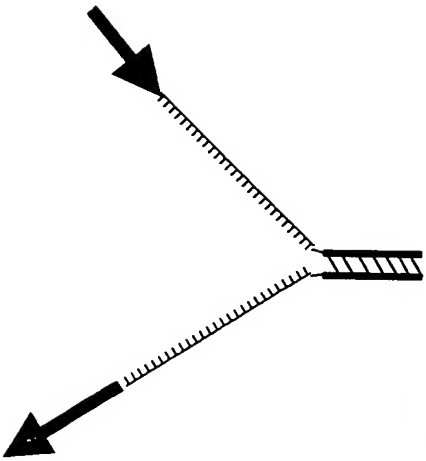
G15D



THR14  
GGT TGG TGT GGT TGG TTT TTT T CTG TCG TTA GTG AAG GTT  
THR15  
AAC CTT CAC TAA CGA CAG TTT TTT T AGT CCG TGG TAG GGC  
AGG TTG GGG TGA CT



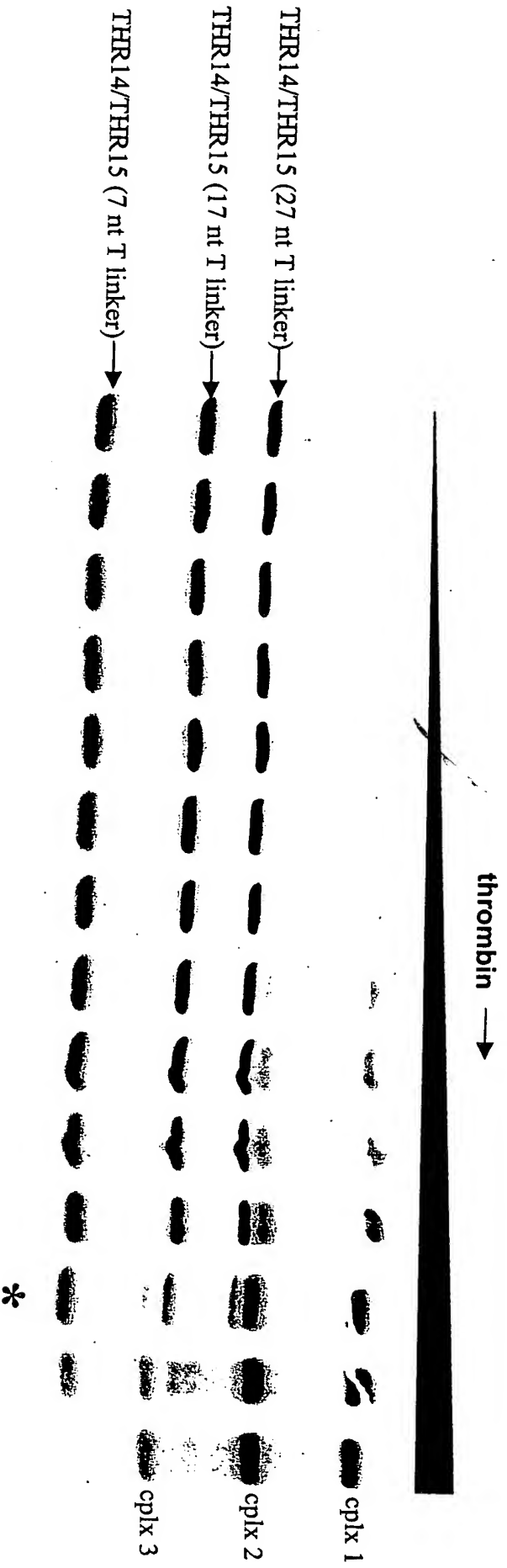
THR16  
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TT CTG TCG TTA GTG  
AAG GTT  
THR17  
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TT AGT CCG TGG  
TAG GGC AGG TTG GGG TGA CT



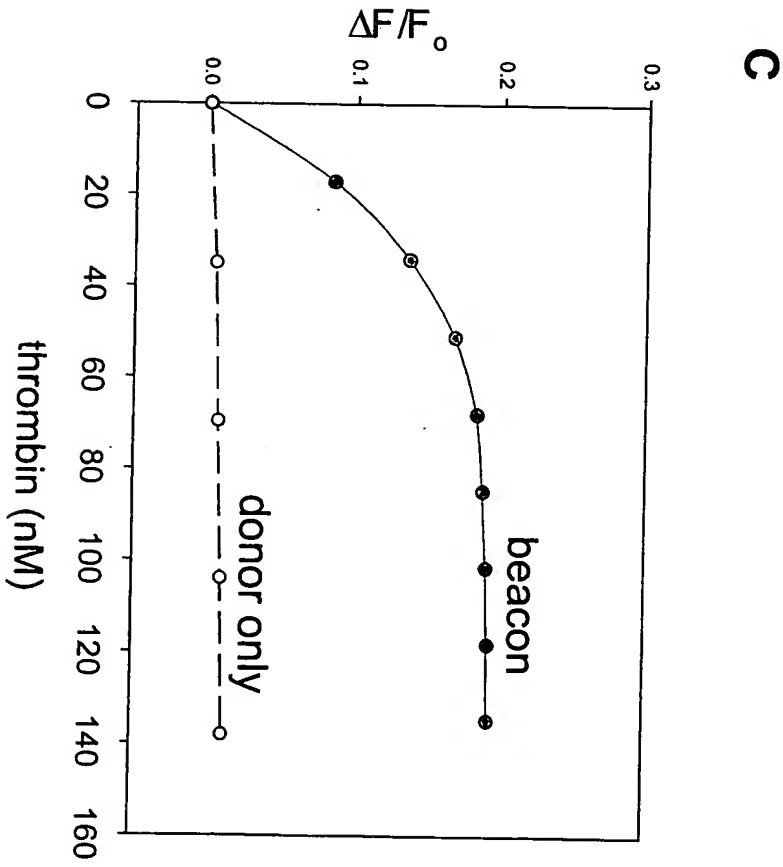
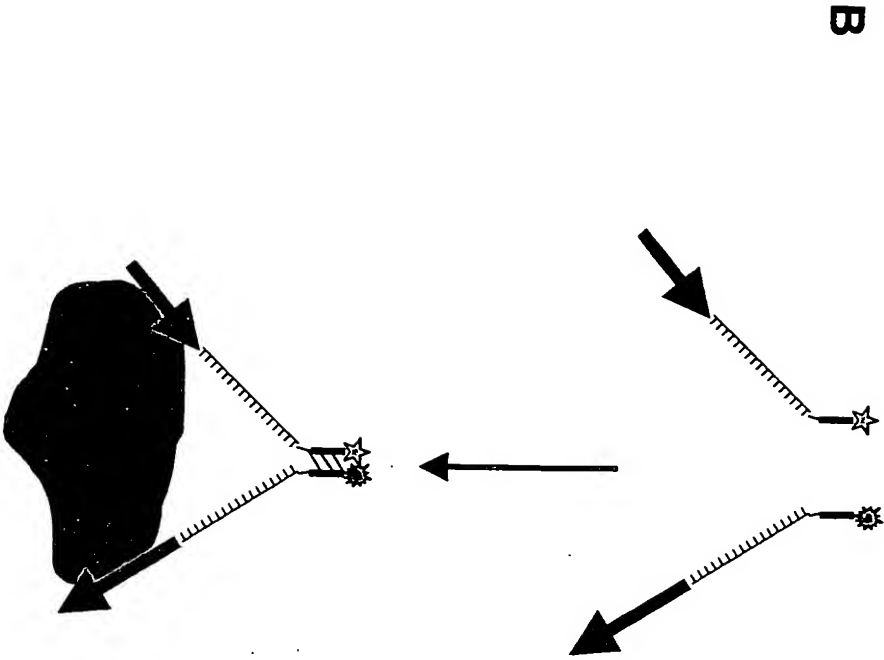
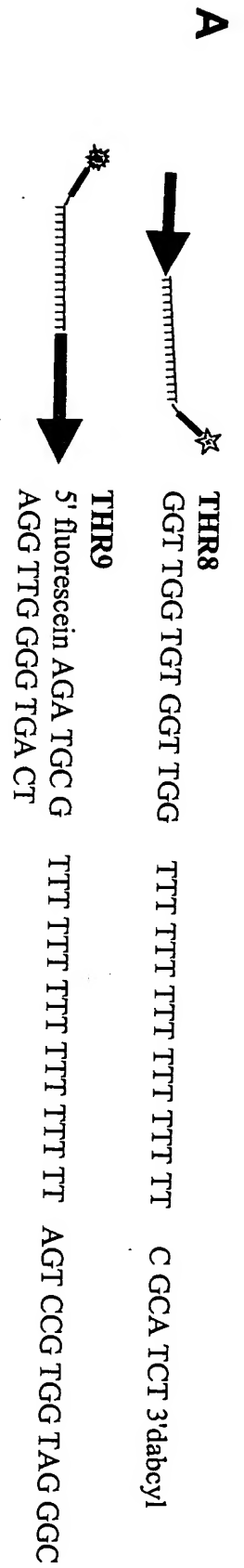
THR18  
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TTT TTT CTG TCG  
TTA GTG AAG GTT  
THR19  
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TTT TTT AGT  
CCG TGG TAG GGC AGG TTG GGG TGA CT

Fig. 11

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Figs. 12A-12C



Figs. 13A-13C

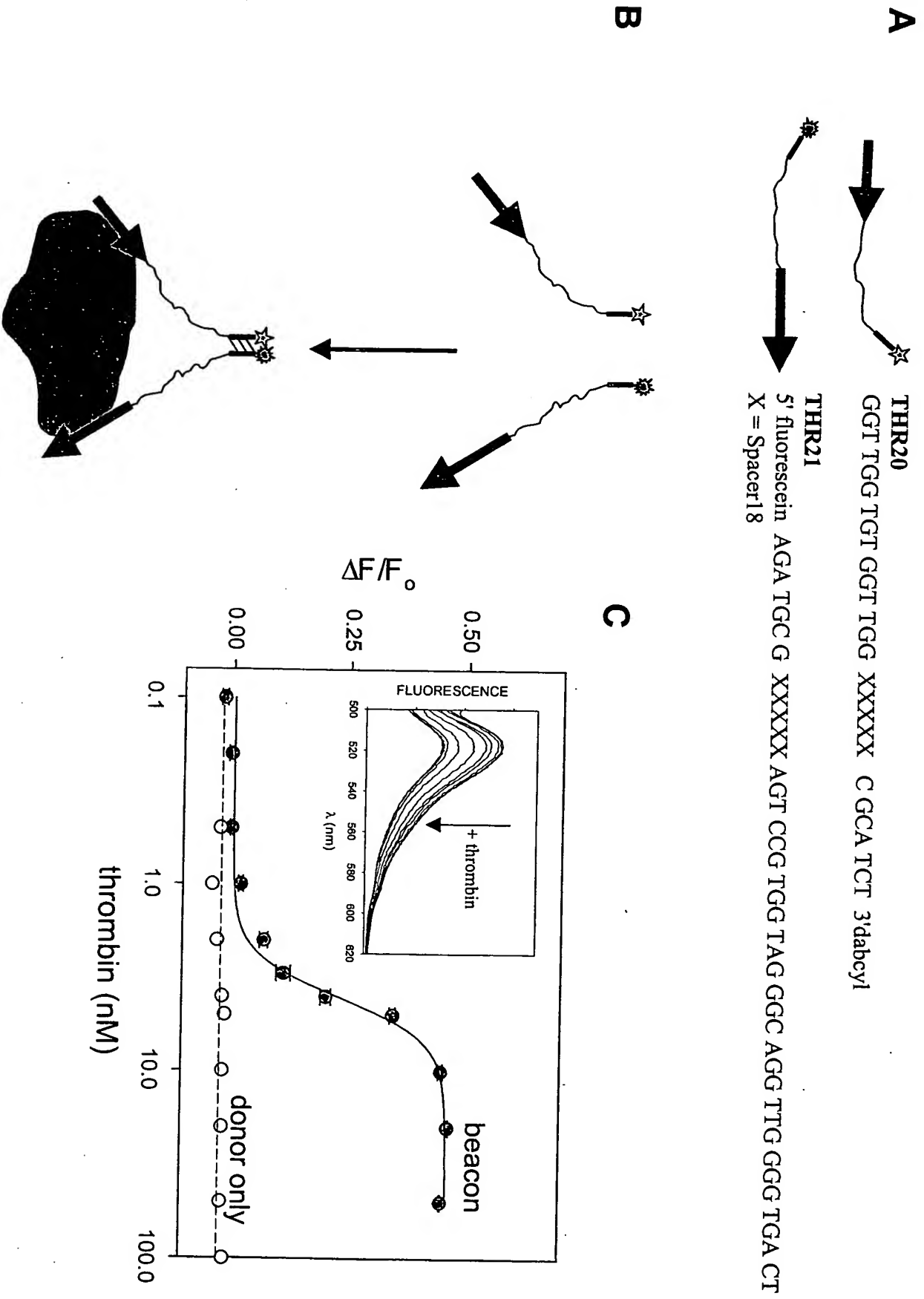
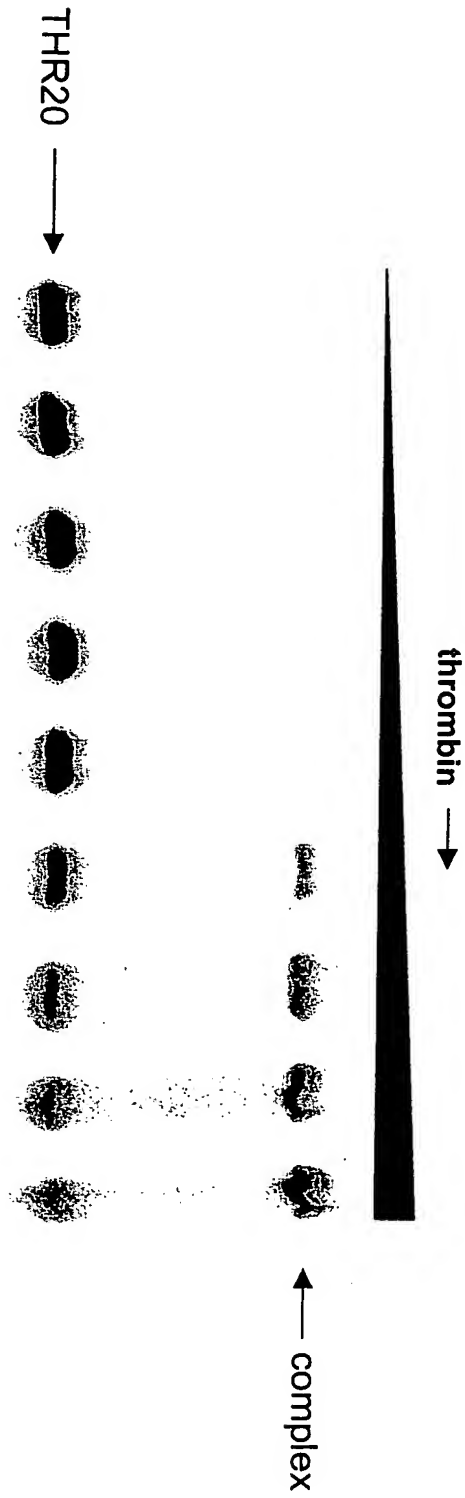
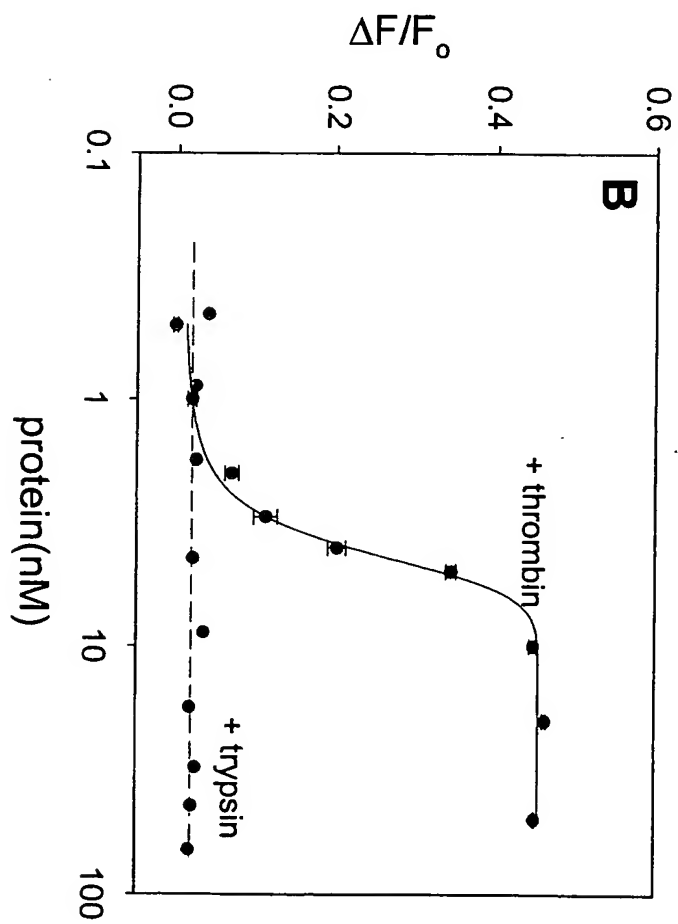
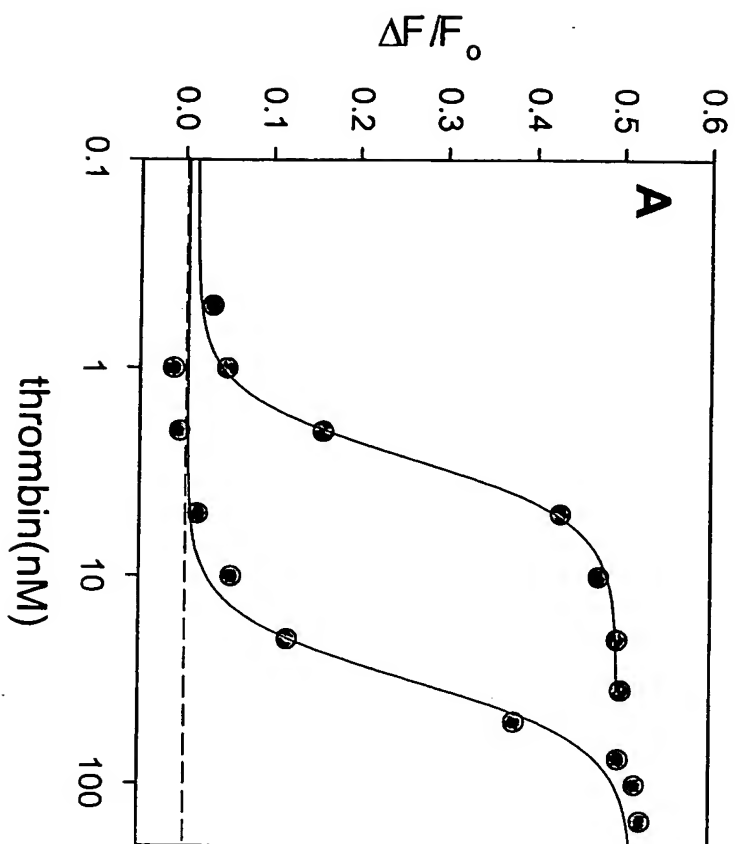


Fig. 14



Figs. 15A-15B



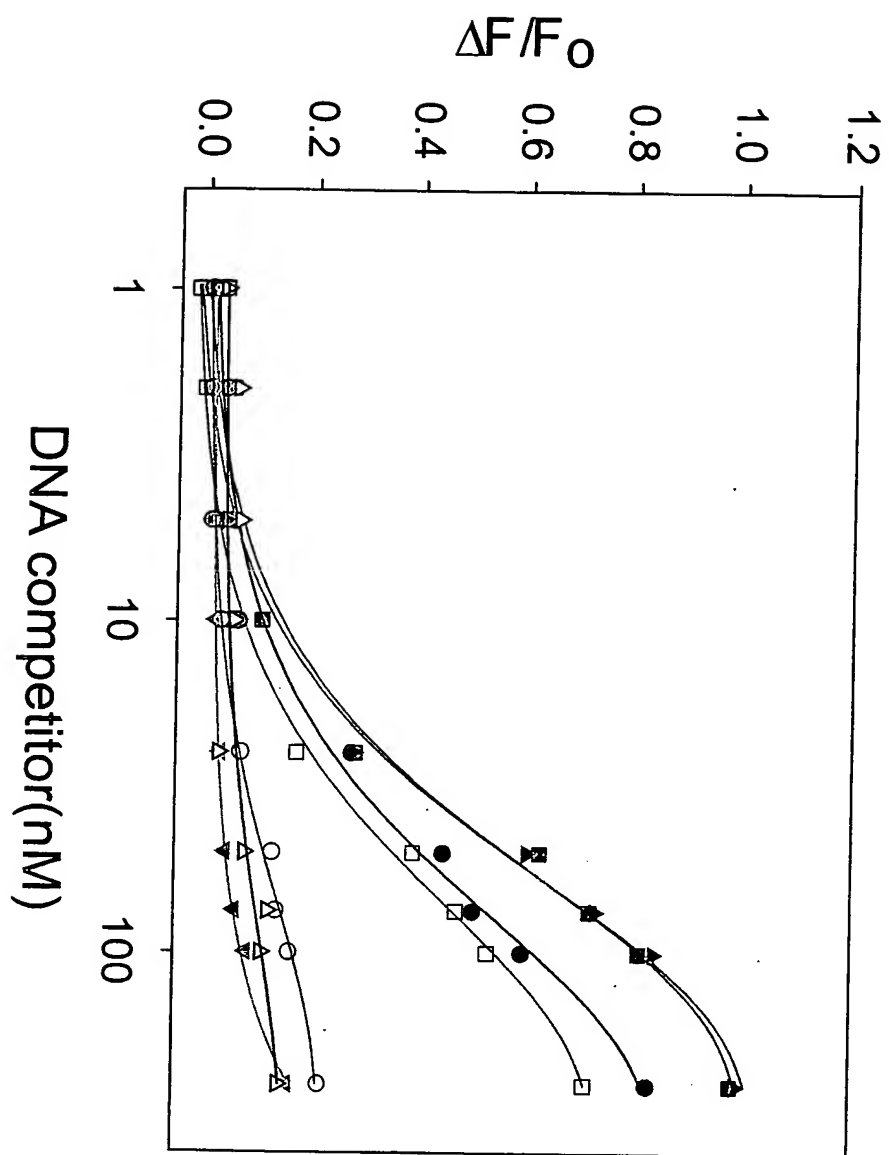
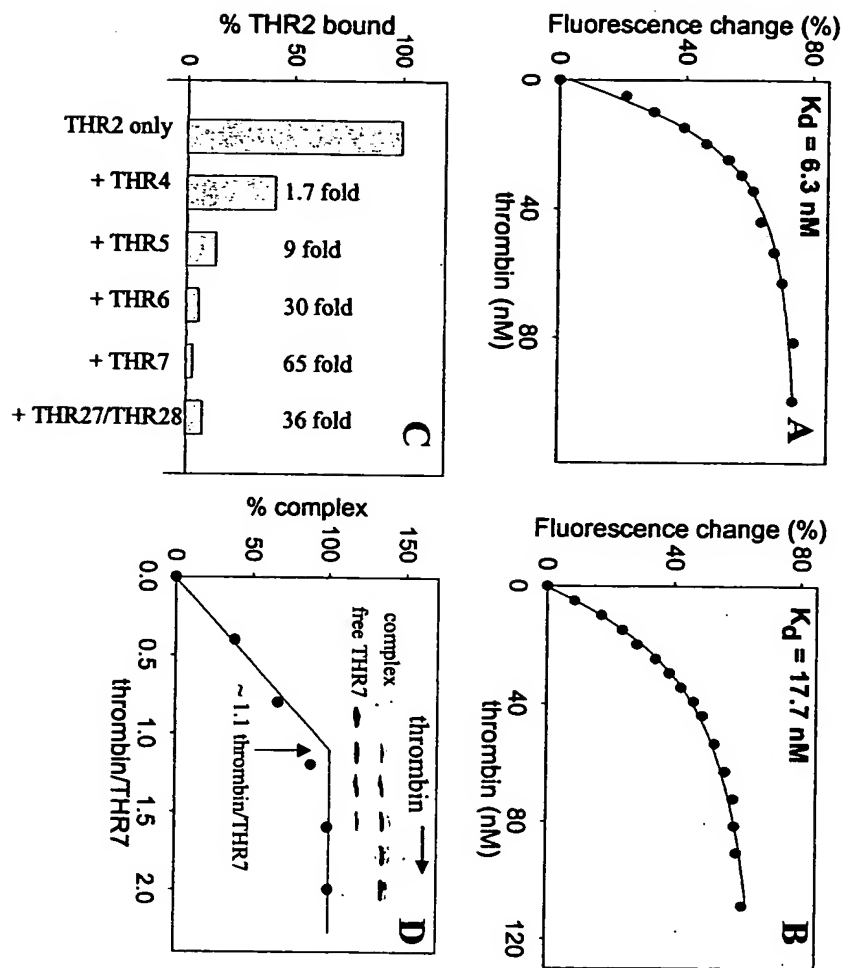


Fig. 16



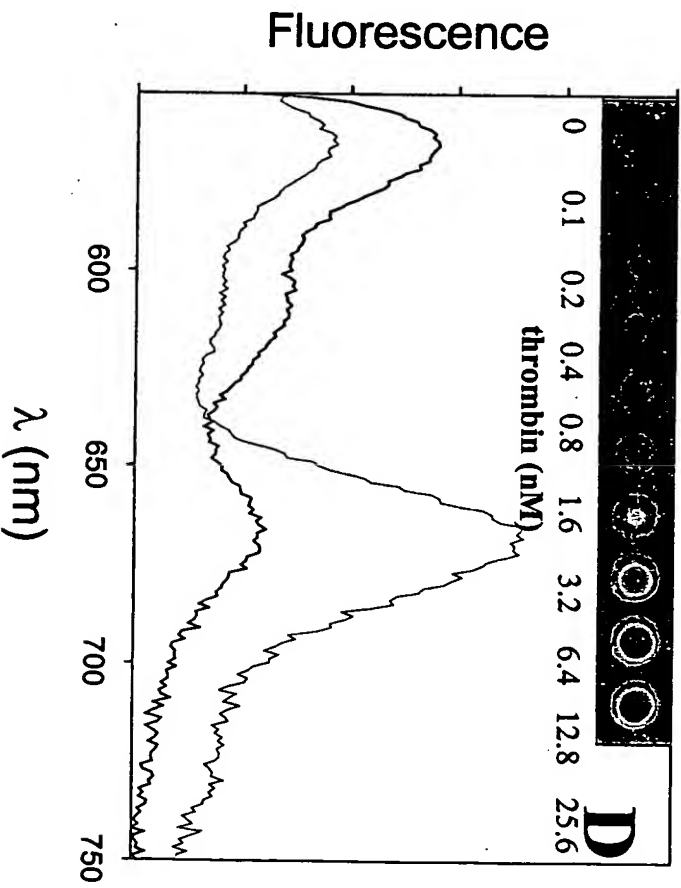
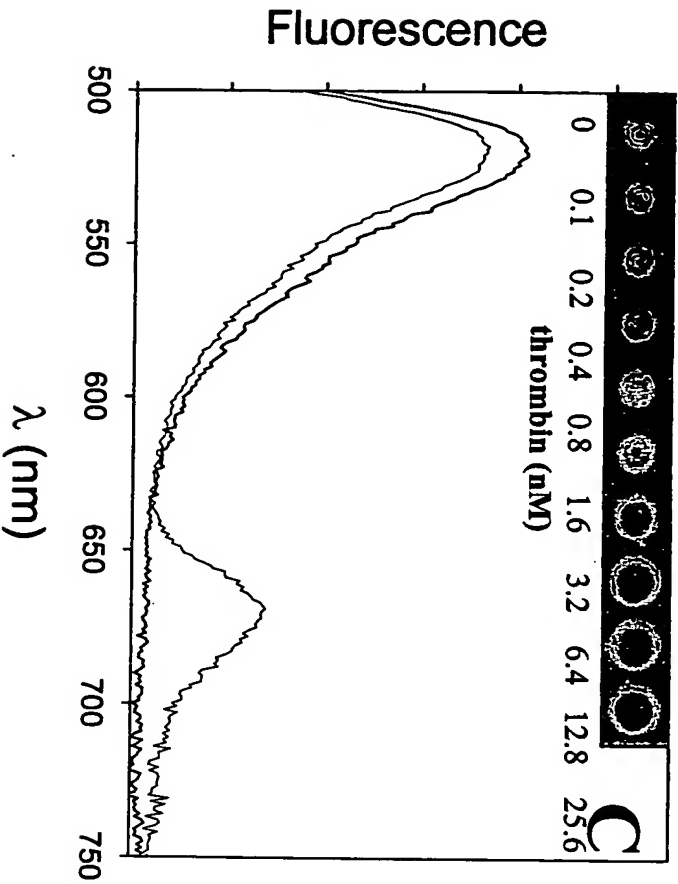
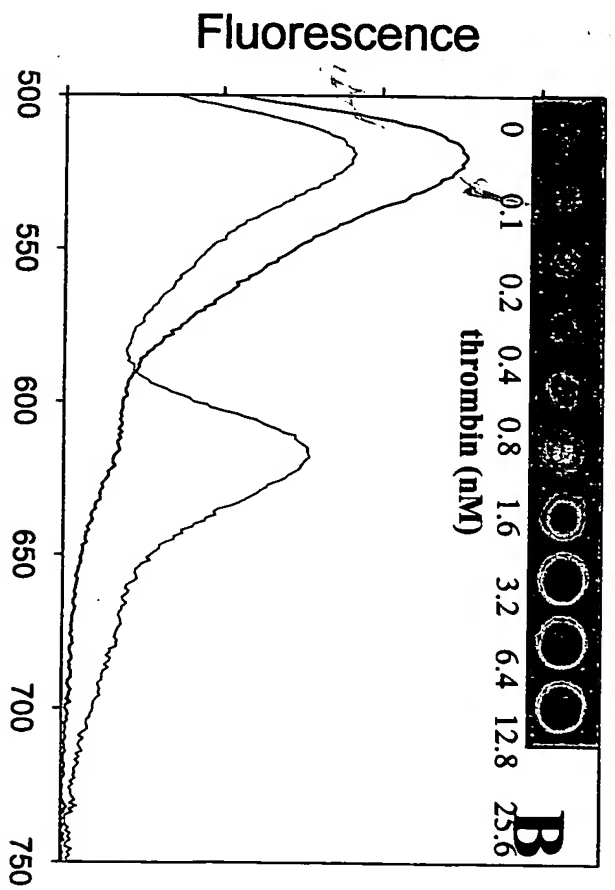
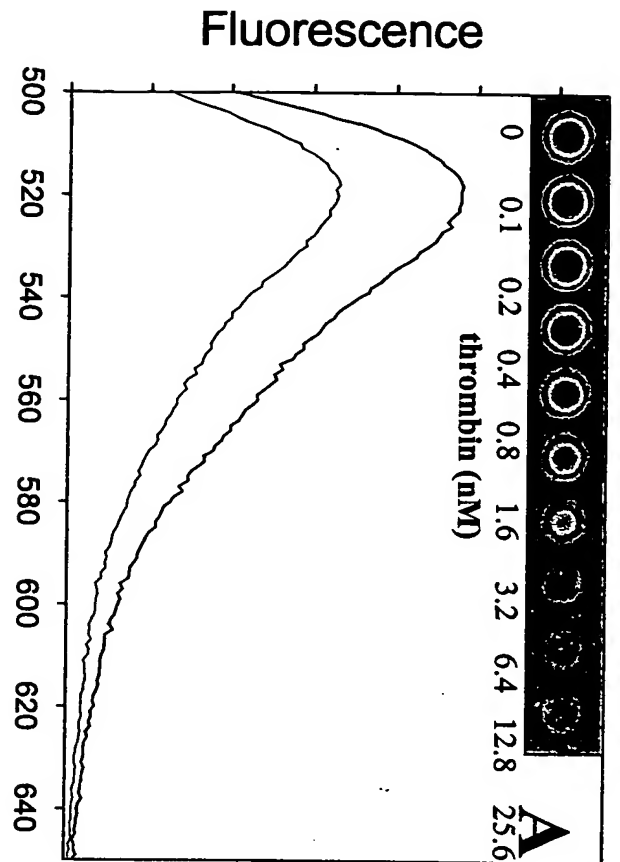
Figs. 17A-17D



Figs. 18A-18D

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Figs. 19A-19F

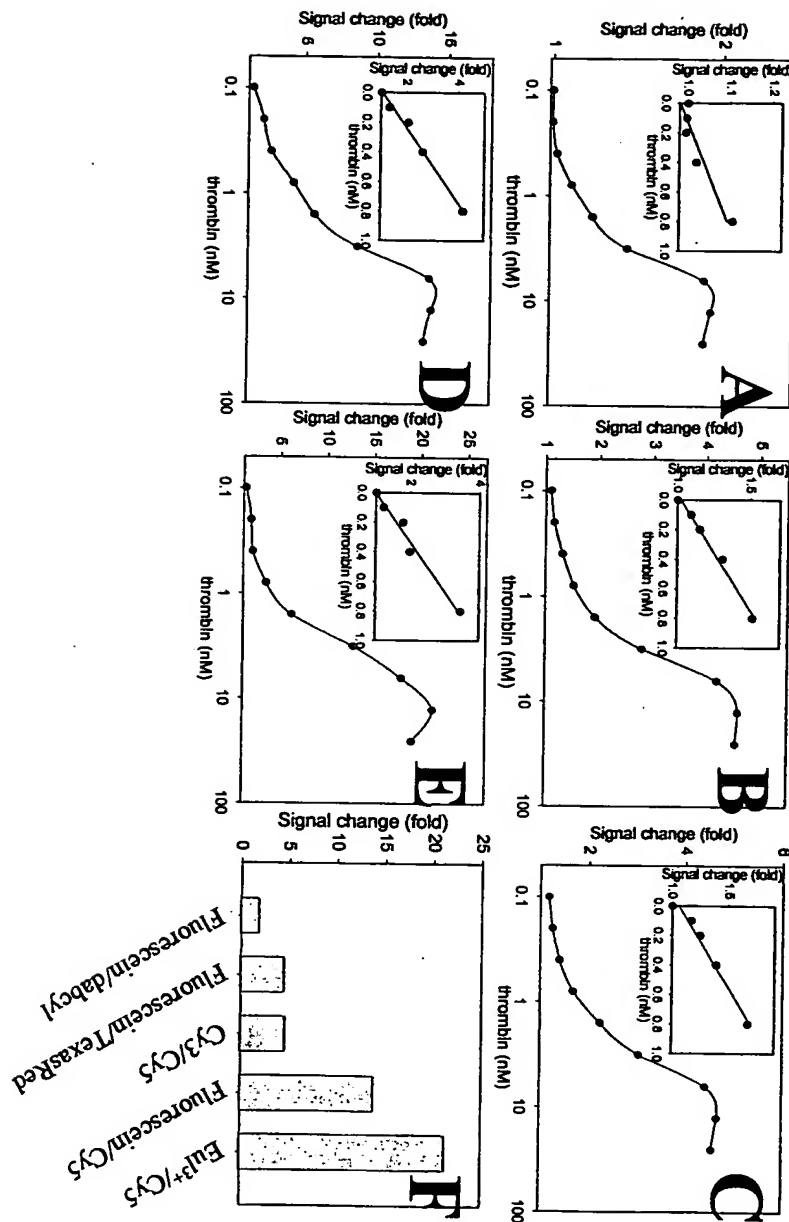
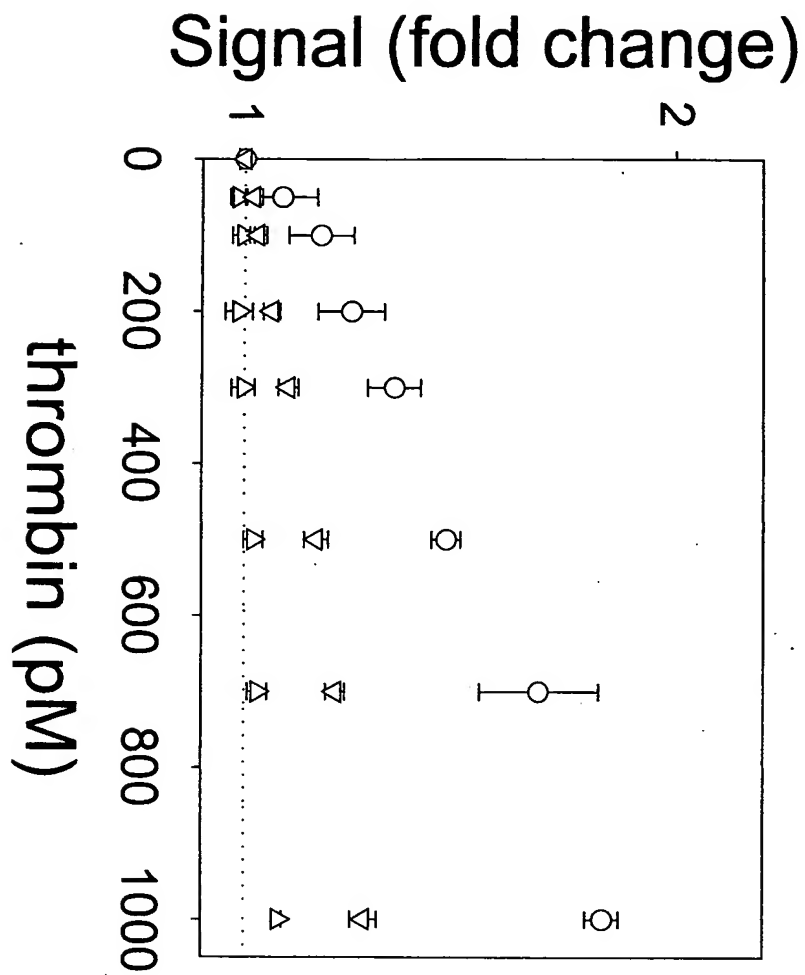


Fig. 20



Figs. 21A-21B

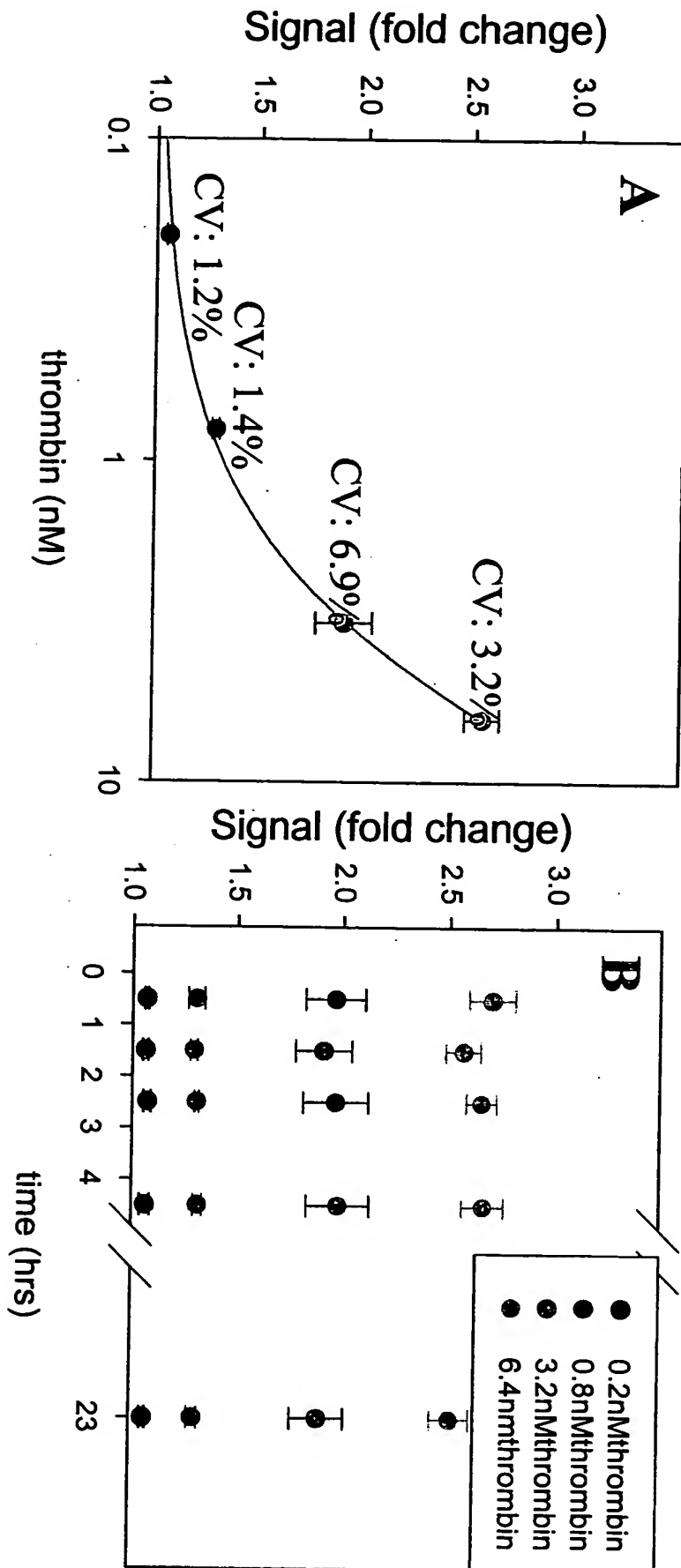
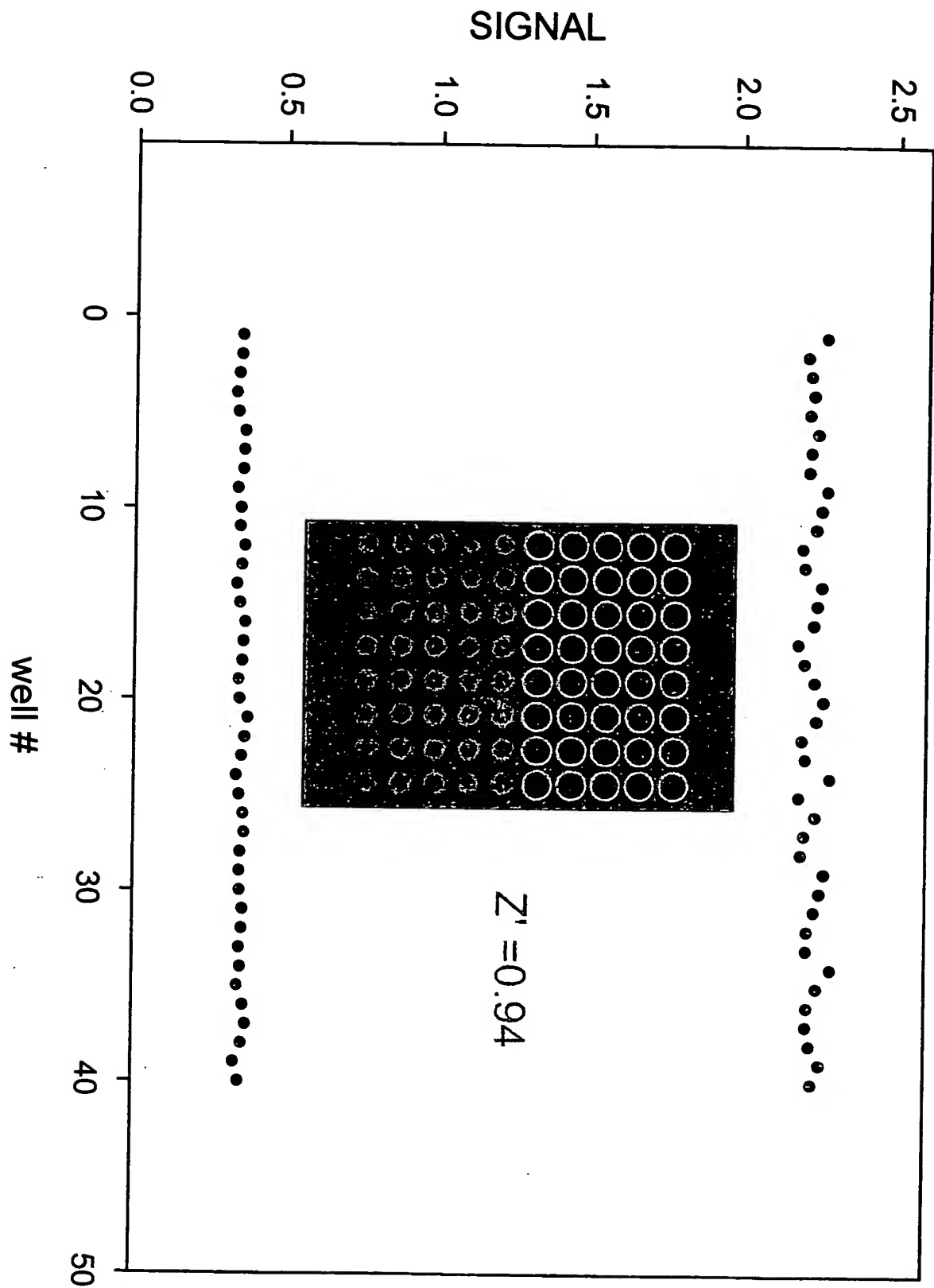


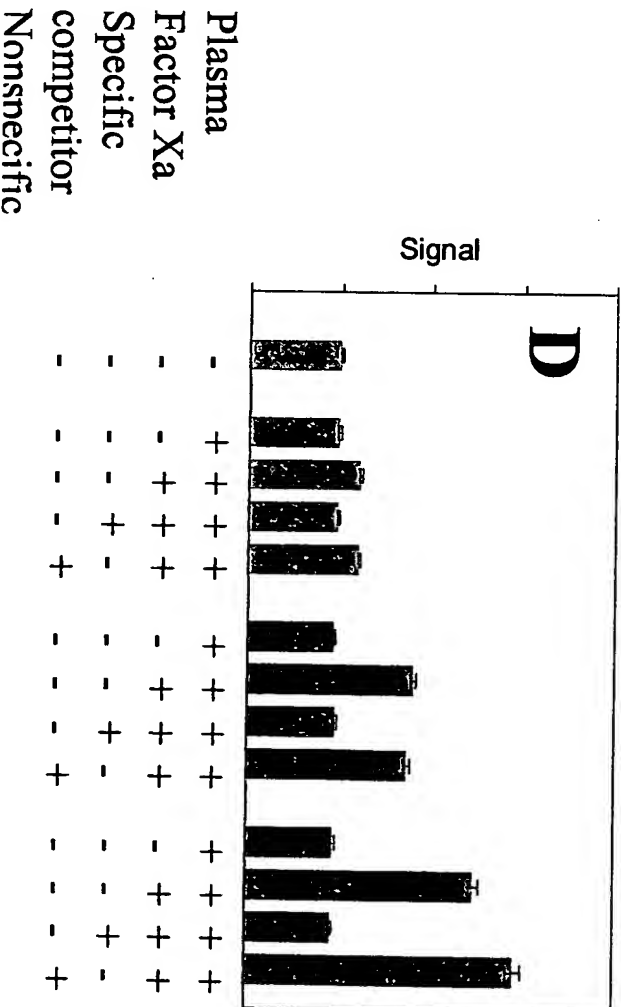
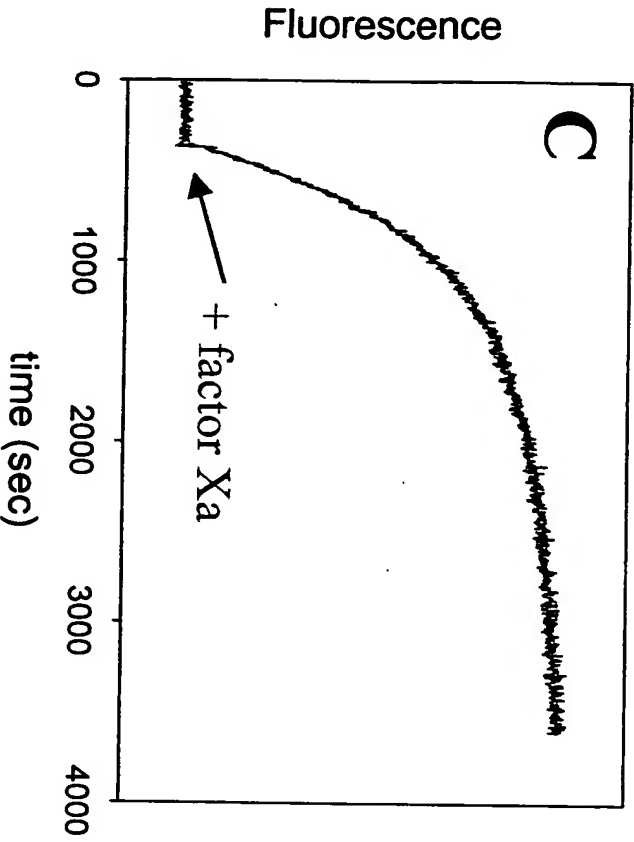
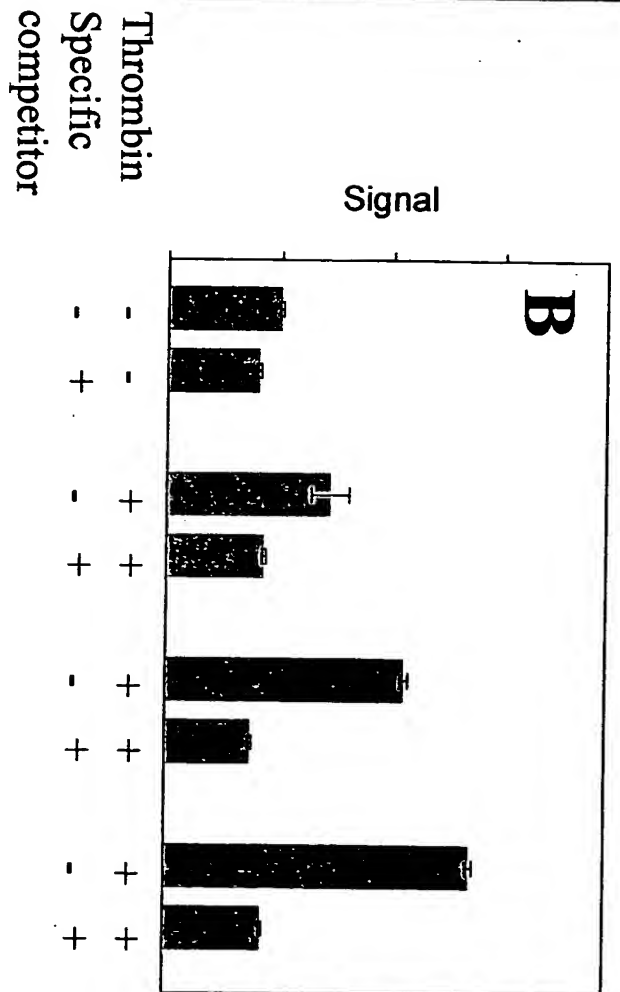
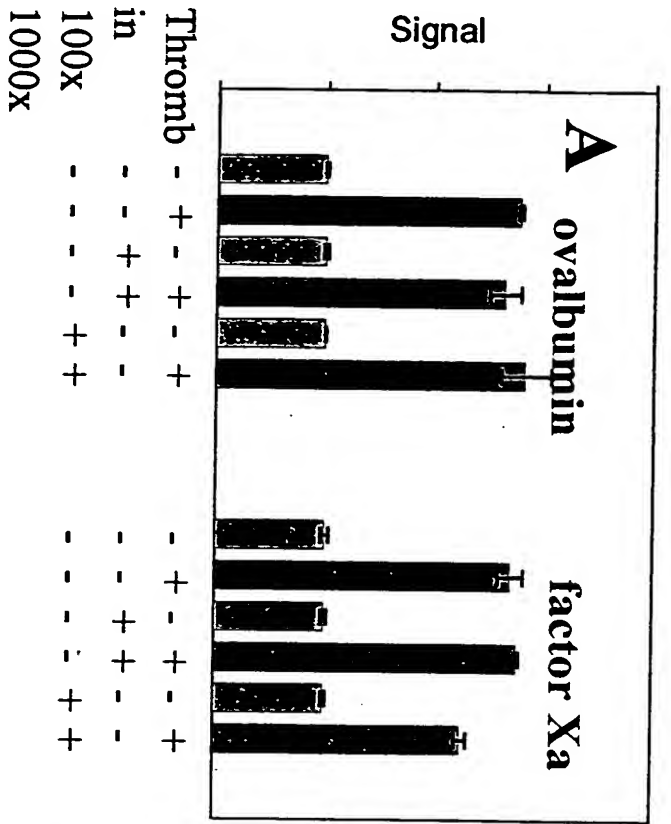
Fig. 22

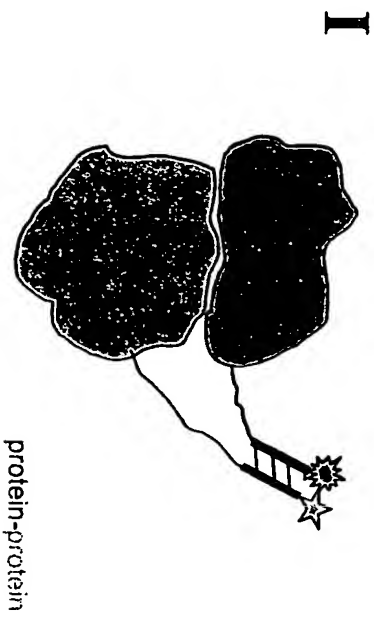
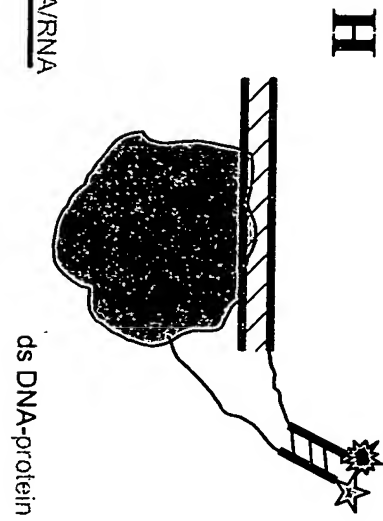
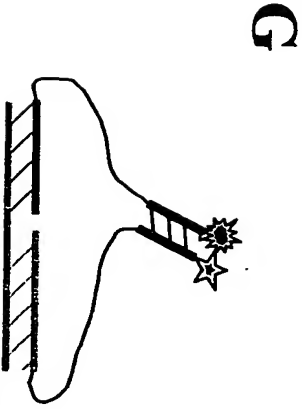
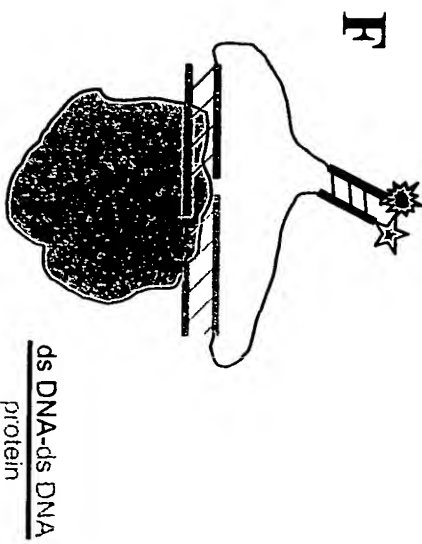
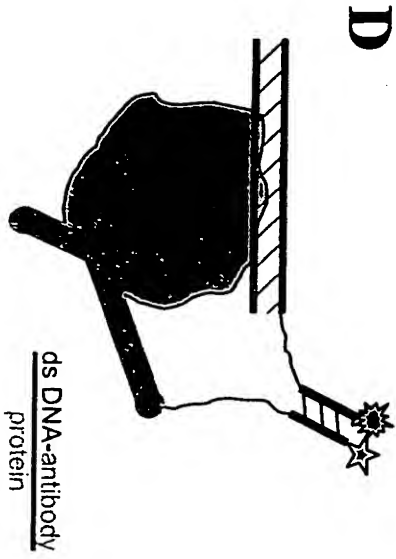
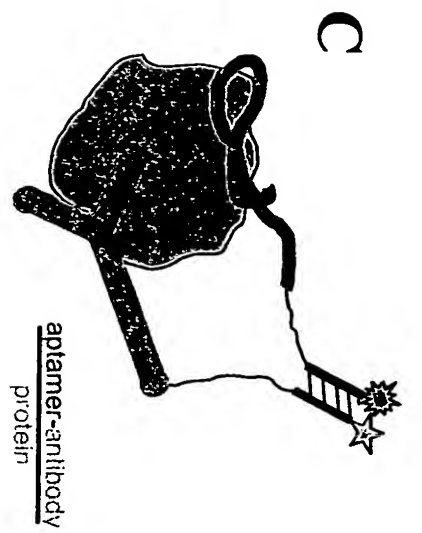
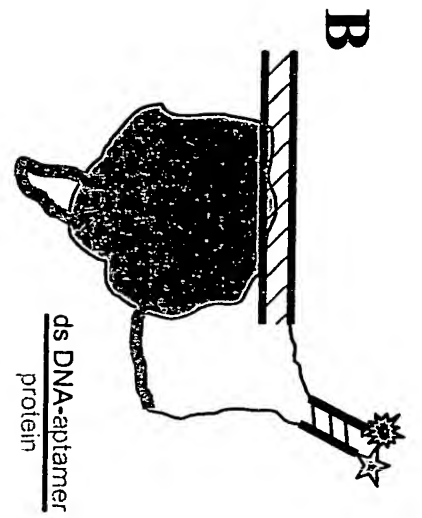
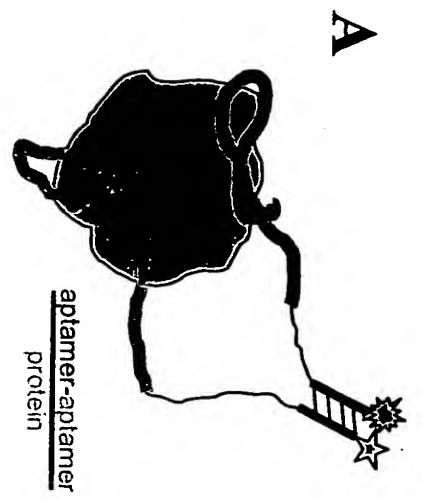


Figs. 23A-23D

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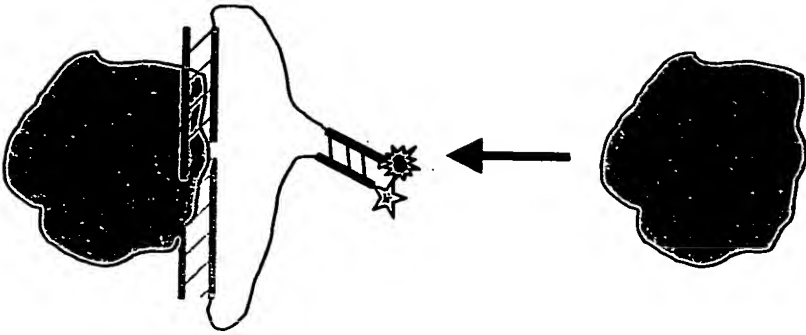
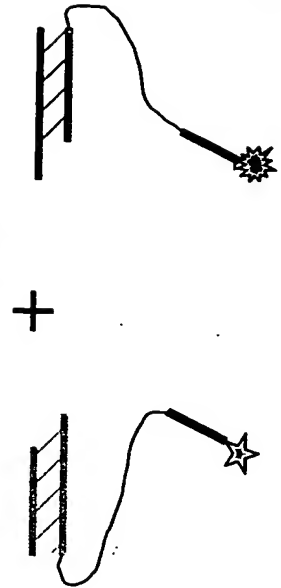


Figs. 24A-24I

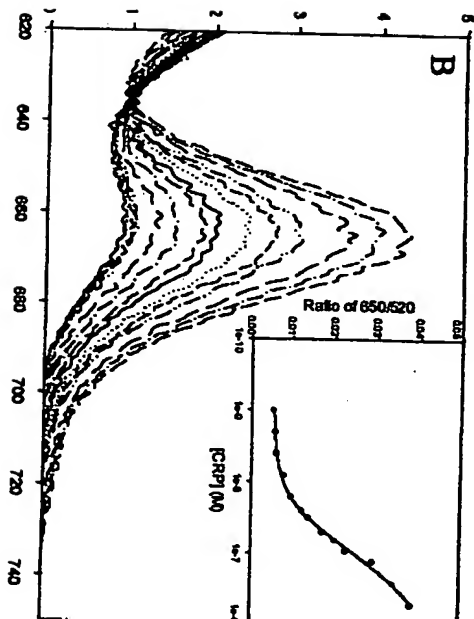


Figs. 25A-25B

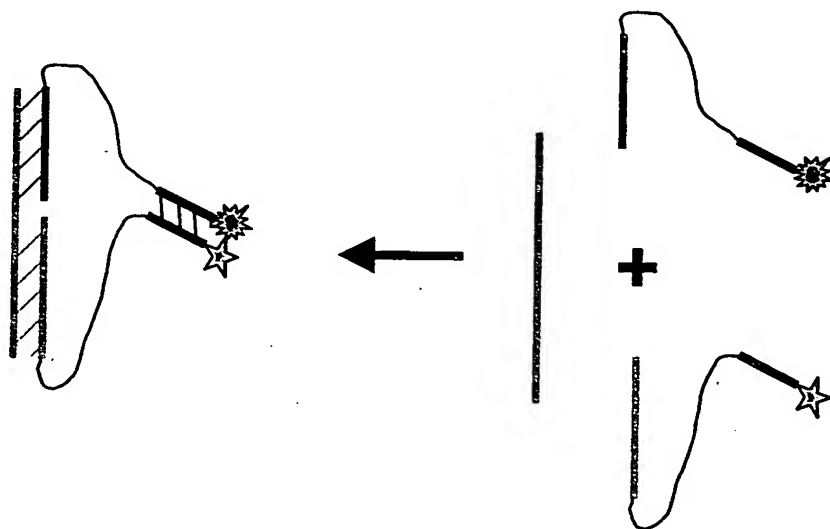
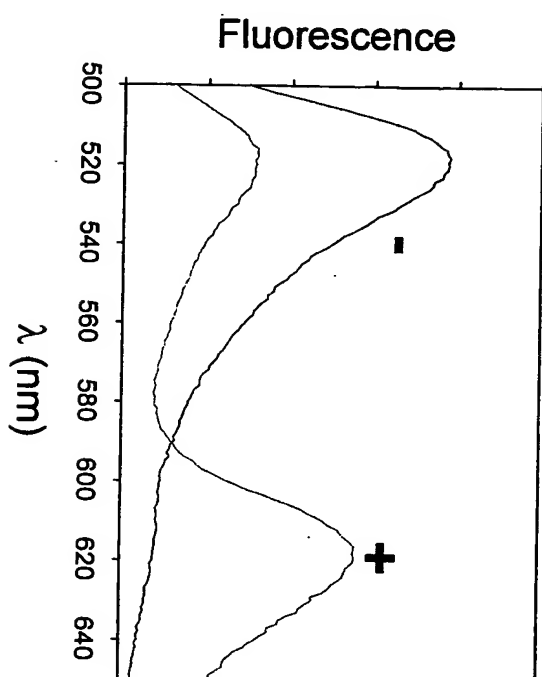
A



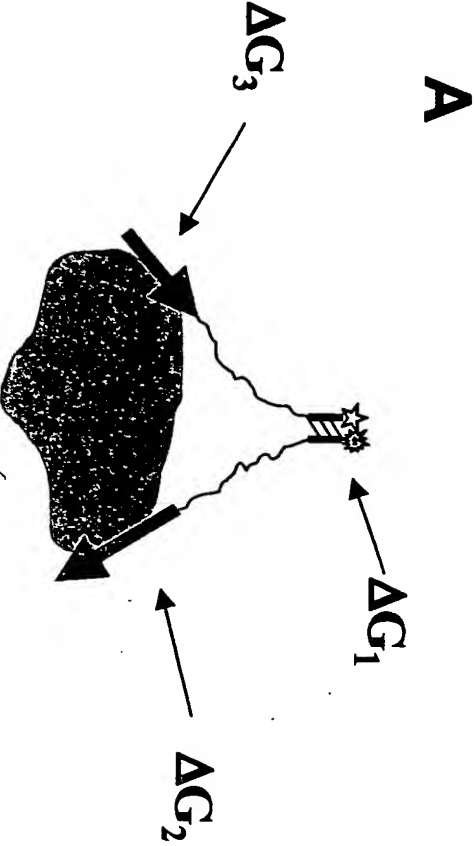
B



Figs. 26A-26B

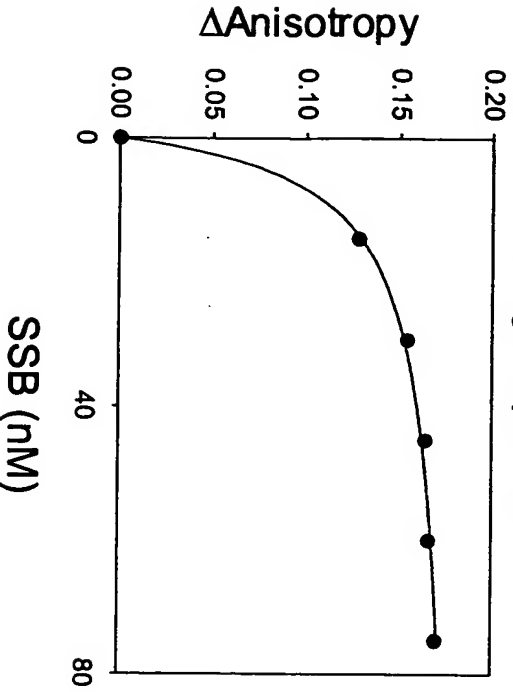
**A****B**

Figs. 27A-27C



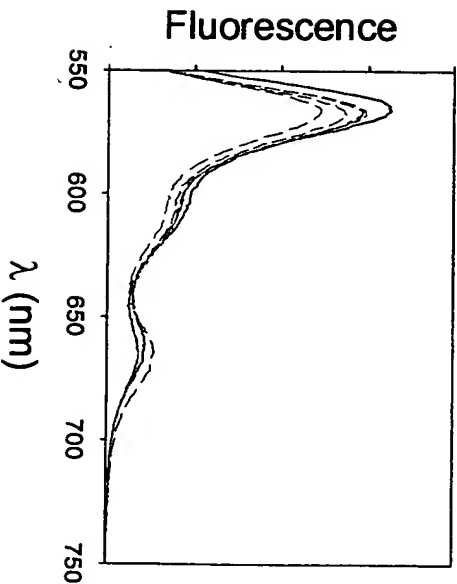
**B**

Nonspecific binding to  
single aptamer



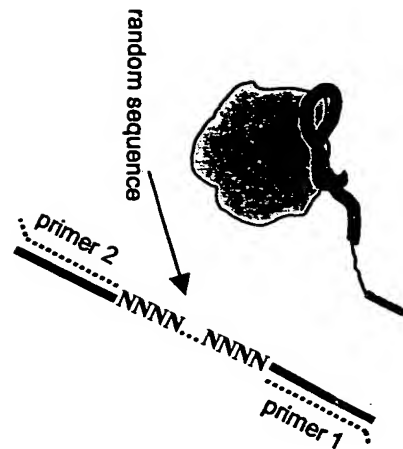
**C**

No signal with the beacon

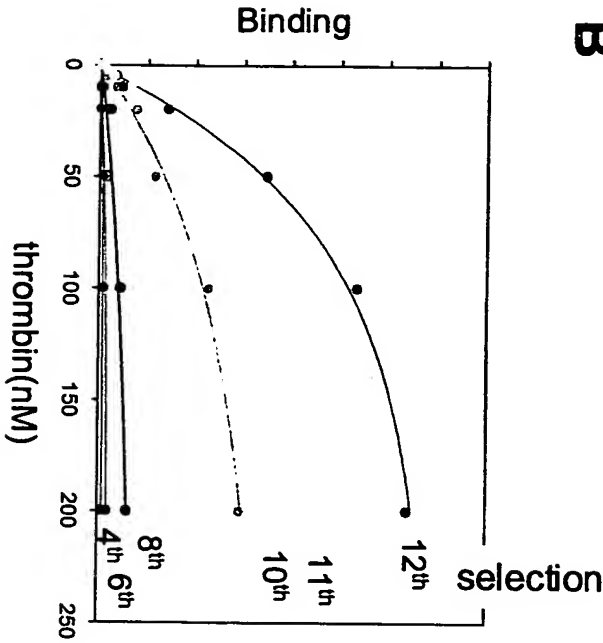


Figs. 28A-28C

A



B



C

```

clone1  --GACGCT--ATGAGCATAGCGTAAATGAG--AGATTGCT--
clone9  --GACGCT--ATGAGCATAGCGTAAATGAG--AGATTGCT--
clone7  --GACGCT--ATGAGCATAGCGTAAATGAG--AGATTGCT--
clone12 --GACGCT--ATGAGCATAGCGTAAATGAG--AGATTGCT--
clone2  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone3  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone4  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone8  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone23 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone11 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone32 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone33 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone29 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone31 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone5  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone6  --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone35 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone10 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone34 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone20 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone21 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone24 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone26 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone13 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone15 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone16 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone19 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone25 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone17 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone14 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone27 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone28 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone30 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
clone18 --GATGCGTAATGCTTAAAGGCTAGAGGATGCT--
ruler   1.....10.....20.....30.....40.....50.....

```

Figs. 29A-29B

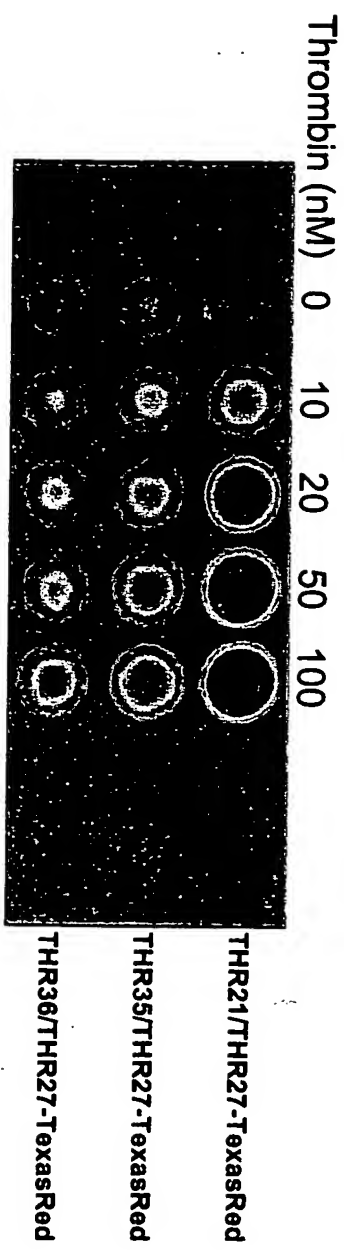
clones 20,21,24,26

5'fluoresceinAGATGCGXXXXX AG GTT GGG GGT ACT ACT AGG TAT CAA TGG GTA GGG TGG TGT AACGC

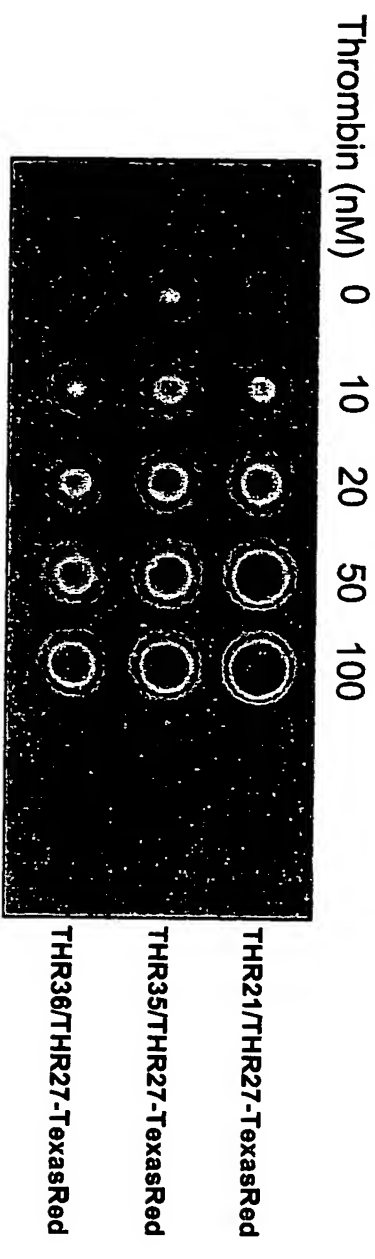
THR35

5'fluoresceinAGATGCGXXXXX GTG AAG GTT GGG GGT ACT AGG TAT CAA TGG GTA GGG TGG TGT AAC GCC ATA T THR36

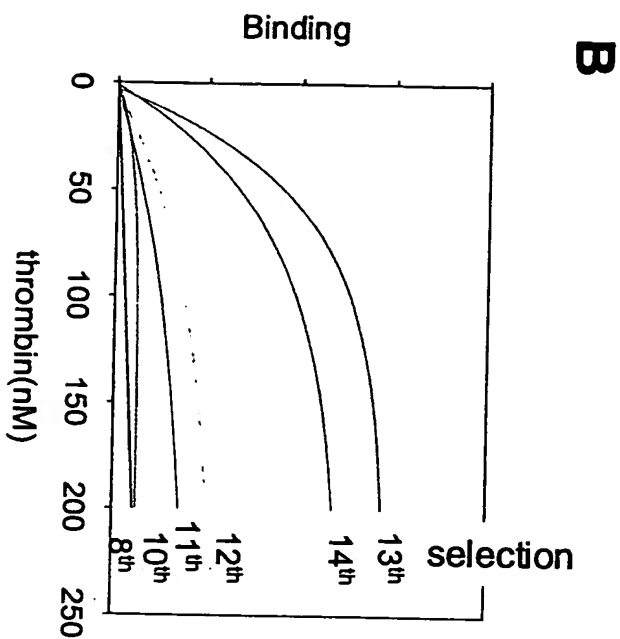
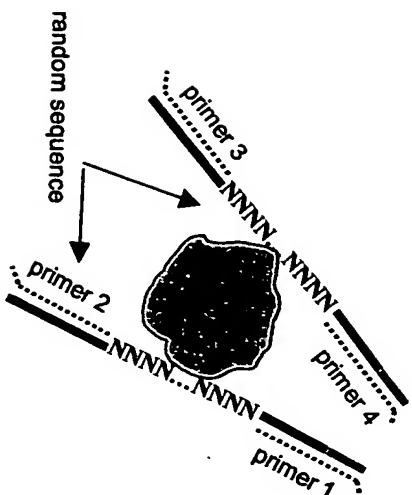
A



B



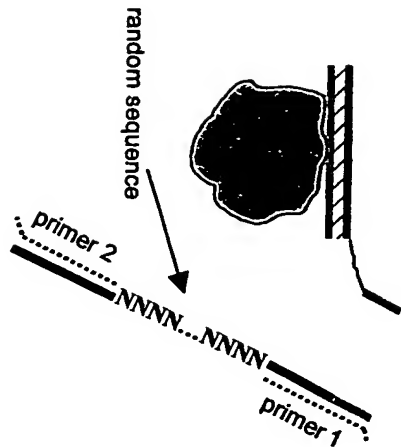
**A**



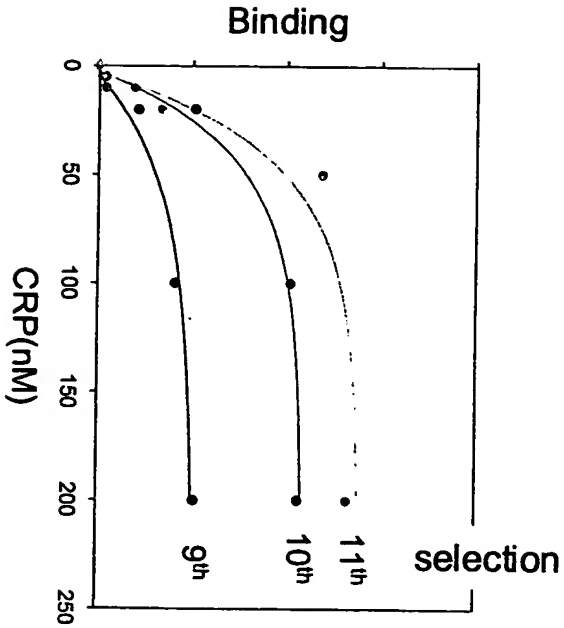
clone1-1	-----GCGTACCGCTCGTCTGTAATACCG-----ATTGCGATT-----	30
clone1-2	-----GCGTACCGCTCGTCTGTAATACCG-----ATTGCGATT-----	30
clone1-4	-----GCGTACCGCTCGTCTGTAATACCG-----ATTGCGATT-----	30
clone1-5	-----GCGTACCGCTCGTCTGTAATACCG-----ATTGCGATT-----	30
clone1-9	-----GCGTACCGCTCGTCTGTAATACCG-----ATTGCGATT-----	30
clone2-4	-----GCTACCGCTCGTCTGTAATACCGCTGAG-----ATTGCGATT-----	30
clone2-7	-----GCTACCGCTCGTCTGTAATACCGCTGAG-----ATTGCGATT-----	30
clone2-10	-----GCTACCGCTCGTCTGTAATACCGCTGAG-----ATTGCGATT-----	30
clone2-8	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-9	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-12	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-14	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone1-8	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-2	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone1-7	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-5	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-13	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-3	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-11	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-1	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone1-10	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone1-6	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone1-3	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
clone2-6	-----TACGATCGCTTACCGCTCGTCTGAGCTGAG-----ATTGCGATT-----	30
ruler	1.....10.....20.....30.....40	

Figs. 31A-31C

A



B



C

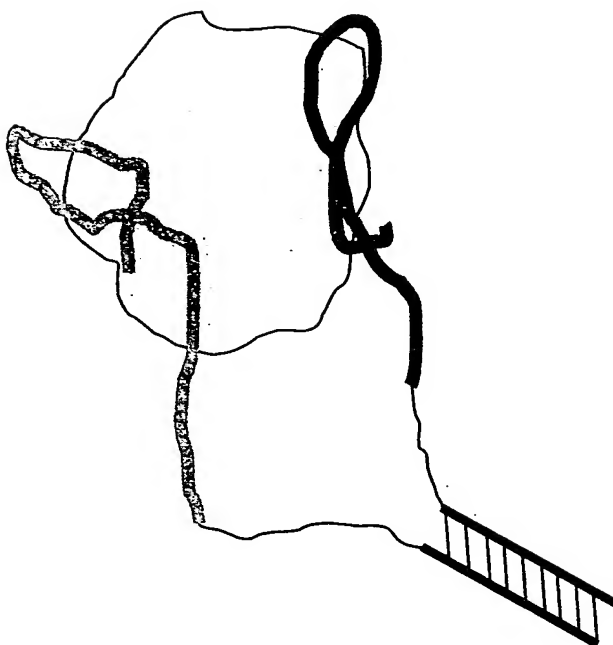
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clone1  ATTCNAGAGCTGCTGTCTTAAAGCTATCGACTTAC----- 33
clone23  -----GAGGATTTAAAGCCATTCATCTAGATTTGCGCATTTG----- 33
clone3  -----AAAGGATTCACCTAGAGTTGCGCGGATATCTTGG----- 33
clone17  -----ACAGCCATTCACCTAGAGTTGCGCGGATATCTTGG----- 33
clone15  -----CAAGCATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone7  -----AGGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone20  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone5  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone10  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone13  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone2  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone6  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone9  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone16  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone21  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone4  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone22  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone8  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone14  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone18  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone12  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone19  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
clone11  -----ACGGAATTCCTCAAGAGTTGCGCGGATATCTTGG----- 33
ruler 1 1.....10.....20.....30.....40.....50..... 33

```

Figs. 32A-32B

A



B

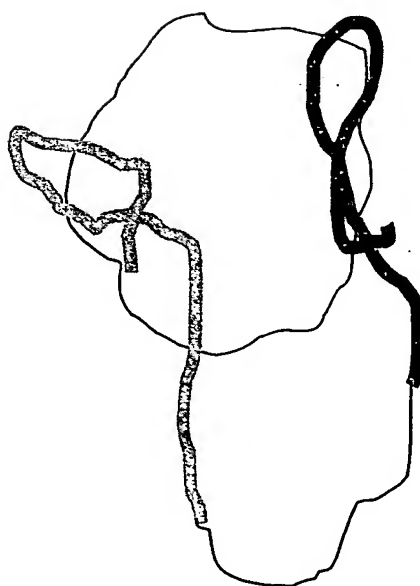
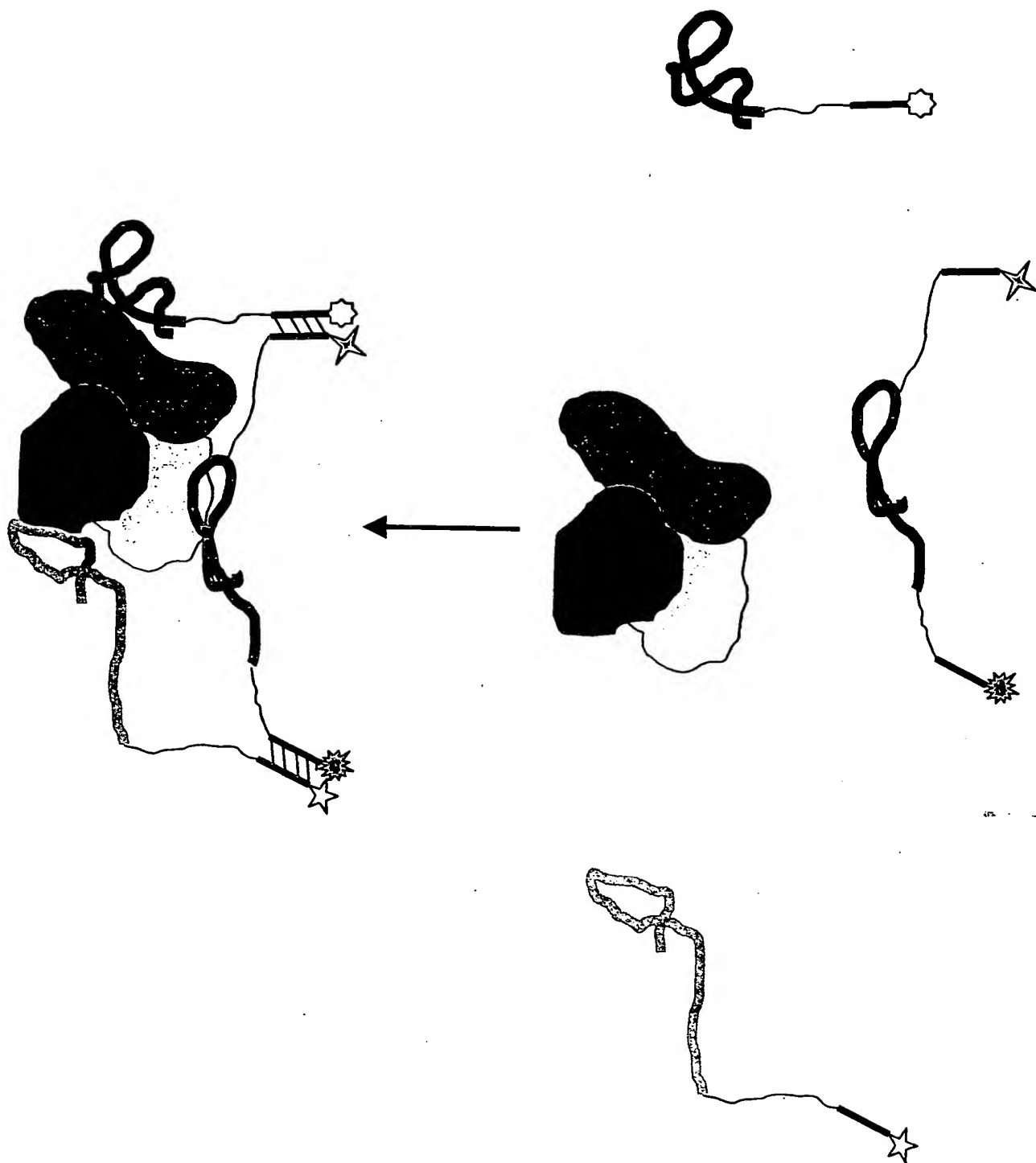




Fig 33



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